

LIBRARY
OF THE
UNIVERSITY OF CALIFORNIA.

GIFT OF
Mrs. SARAH P. WALSWORTH.

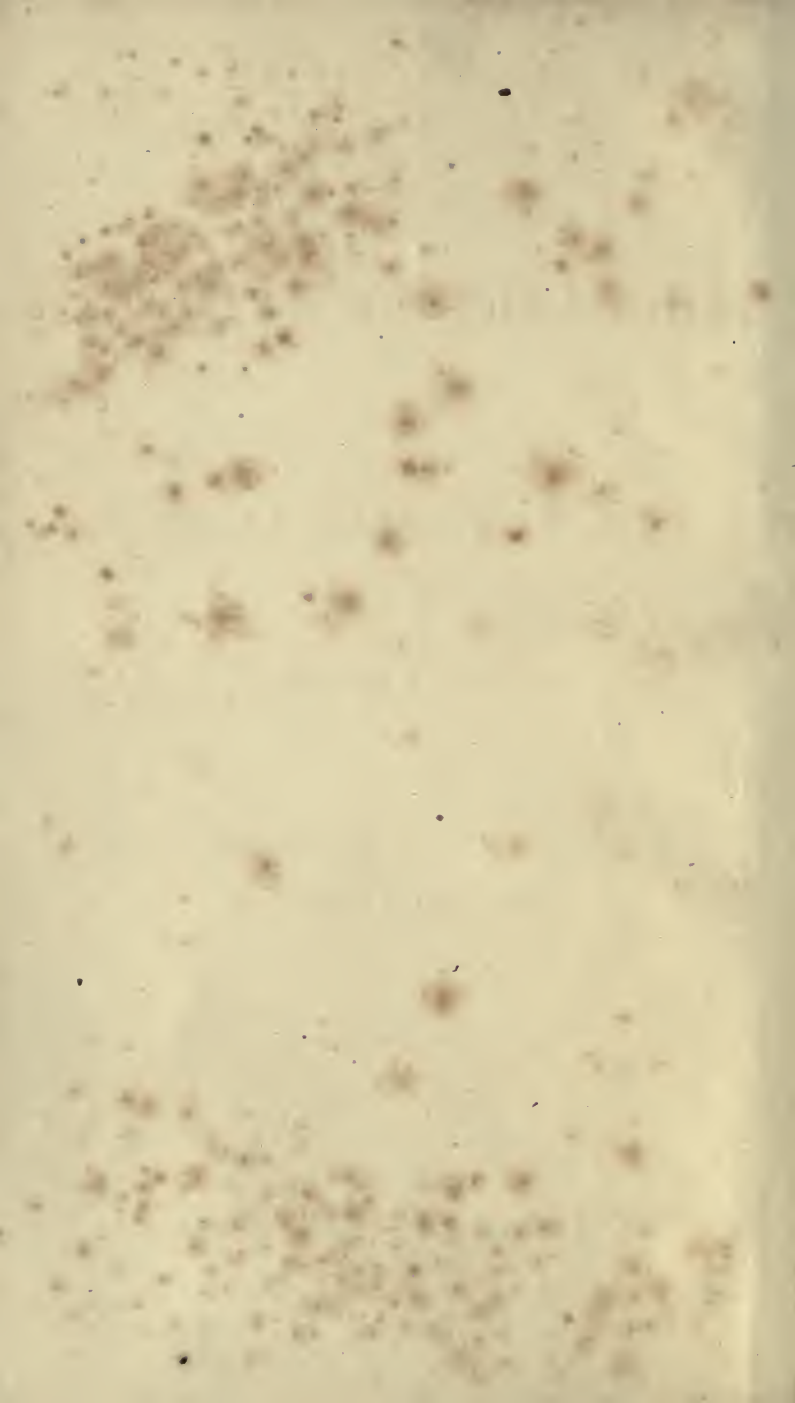
Received October, 1894.

Accessions No. 57064 Class No. 432.



Digitized by the Internet Archive
in 2008 with funding from
Microsoft Corporation





THE
GEOGRAPHY OF NATURE;
OR,
THE WORLD AS IT IS.

BY M. VULLIET.

"

Translated from the French,

BY A LADY.



BOSTON:
HICKLING, SWAN, AND BROWN.
1856.

GB55
.V9

57064

Entered, according to Act of Congress, in the year 1856, by

HICKLING, SWAN, AND BROWN,

In the Clerk's Office of the District Court of the District of Massachusetts.

ELECTROTYPED AT THE
BOSTON STEREOTYPE FOUNDRY.

PREFACE.

IN presenting to the American public a translation of the recent and very valuable work of M. VULLIET, entitled *Esquisse d'une nouvelle Geographie Physique*, we have assumed to call it "The Geography of Nature, or the World as it is." Its novelty, interest, and value consist in associating with each locality and region named a vivid description of its prominent natural productions and phenomena, aided by pictorial illustrations, and interesting facts drawn from natural history, and always aiming to promote both the intellectual and moral culture of the reader. Each *ocean* is characterized by its winds and currents, its curious and useful vegetables and animals; each *continent*, in its components of mountain, plateau, and plain, its rivers, lakes, and adjacent islands, is presented as a whole and in parts, indicating its aspect, climate, minerals, vegetables, animals, and population.

At a time when so much is being done in our country to awaken an interest in the study of physical geography, a work of this character comes in very opportunely as a collateral aid, supplying materials for elucidation and reflection. The general reader, no less than the youth-

ful learner, cannot fail to reap a rich reward from its perusal.

The accomplished lady, by whom the labor of translation was performed, merits high commendation for the fidelity and accuracy with which she has rendered the original into English. The whole has been carefully revised, and many important additions have been made in various parts of the work, especially in that pertaining to North America. A large number of the pictorial illustrations have been redrawn, and greatly improved. We bespeak for the volume a place in private and public libraries in the school room and in the drawing room.

THE PUBLISHERS.

CONTENTS.

CHAPTER I. — THE EARTH AND THE PLANETARY SYSTEM,.....	11
CHAPTER II. — THE EARTH AND ITS MOTIONS,.....	15
CHAPTER III. — GENERAL OBSERVATIONS ON THE CONTINENTS,.....	19
CHAPTER IV. — GENERAL OBSERVATIONS ON THE OCEANS,.....	28
Tides, 28. — Waves — Depth of the Sea, 29. — Saltness of the Sea, 30. — Evaporation, 31. — Currents of the Sea, 32. — Waterspouts, 33. — Animated Nature at the Bottom of the Sea, 34.	
CHAPTER V. — DESCRIPTION OF THE OCEANS,.....	37
<i>Section 1. THE NORTHERN OCEAN, 37.</i>	
<i>Section 2. THE SOUTHERN OCEAN, 42.</i>	
<i>Section 3. THE ATLANTIC OCEAN, 43.</i>	
<i>Section 4. THE INDIAN OCEAN, 47.</i>	
<i>Section 5. THE PACIFIC OCEAN, 50.</i>	
CHAPTER VI. — THE CONTINENT OF ASIA,.....	54
<i>Section 1. THE LIMITS OF ASIA.</i>	
Seas, 54.	
<i>Section 2. PENINSULAS OF ASIA.</i>	
Anatolia, 59. — Arabia, 62. — India, 69. — Indo-China, 77. —	
Corea — Kamtchatka, 82.	
<i>Section 3. MOUNTAINS OF ASIA.</i>	
Himalaya, 85. — Sinechan, 88. — Yunling — Khin-gan Moun-	

tains, 89. — Yablonnio — Altai, 90. — Thian-Shan, 91. — Mong-Tagh — Bolor-Tagh, 92. — Ural — Caucasus, 93. — Taurus — Lebanon, 95.

Section 4. PLATEAUS OF ASIA, 96.

Thibet, 97. — Toorkistan and Mongolia, 98. — Soongaria, 101. — Mantchooria — Iran, 102. — Armenia, 105. — Anatolia — Syria, 106. — Judea, 107. — Nedjed — Deccan, 110.

Section 5. PLAINS OF ASIA.

Hindustan and Bengal, 112. — China, 113. — Siberia, 118. — Toorkistan, 124. — Syria, 125.

Section 6. LAKES OF ASIA.

Caspian, 127. — Aral — Van and Ooroomeeyah — Dead Sea, 129. — Tiberias, 132. — Baikal, 133.

Section 7. RIVERS OF ASIA, 133.

Obe, Yenisei, and Lena, 134. — Amoor, Hoang-ho, and Yangtse-Kiang, 135. — Menam, Irrawaddy, 138. — Ganges, 139. — Indus, 141. — Euphrates and Tigris, 142. — Oxus and Jaxartes, 143. — Jordan, 144.

Section 8. ISLANDS OF ASIA.

New Siberia, 145. — Koorile — Japan, 146. — Loo Choo, 149. — Formosa — Hainan — Ceylon, 150. — Maldives, 154. — Laccadives — Cyprus — Rhodes — Sporades, 156.

CHAPTER VII. — THE CONTINENT OF AFRICA,..... 158

Section 1. FORM AND BOUNDARIES OF AFRICA, 158.

Section 2. MOUNTAINS OF AFRICA.

Nieuwveld, 160. — Lupata, 163. — Mountains of the Moon — Congo Mountains, 166. — Kong Mountains, 167. — Atlas Mountains, 168.

Section 3. PLATEAUS OF AFRICA.

Plateau of Southern Upper Africa, 171. — Southern Terrace, 180. — Terraces of the Eastern Coast, 186. — Northern Terrace, or Terrace of Lower Soudan, 188. — Western Terraces, or Congo, 192. — Plateau of Abyssinia, 194. — Plateau of Upper Soudan, 200.

Section 4. PLAINS OF AFRICA.

The Sahara, or Great Desert, 207. — Plain of Senegambia, 213. — Coast of Guinea, 218. — Sierra Leone, 221. — Liberia, 222. — Plain of Egypt, or Valley of the Nile, 224.

Section 5. LAKES OF AFRICA.

'Ngami — Dembea, 231. — Tchad, 233.

Section 6. RIVERS OF AFRICA.

Orange River, 233. — Zambeze — Nile, 235. — Zaire and Coanza — Niger, 238. — Senegal and Gambia, 239.

Section 7. ISLANDS OF AFRICA, 239.

Madeira — Canaries, 240. — Cape Verde, 241. — Islands of the Gulf of Guinea, 242. — Madagascar, 243. — Bourbon, Isle of France, 247. — Comoro, Seychelles, Socotra, 248.

CHAPTER VIII. — THE CONTINENT OF EUROPE,..... 249

Section 1. BOUNDARIES, 249.

North Sea, 250. — Baltic Sea, 252. — English Channel, 253. — Irish Sea, 255. — Bay of Biscay — Mediterranean, 256. — Adriatic Sea — Ionian Sea, 259. — The Archipelago — Sea of Marmora, 260. — Black Sea — Sea of Azof, 261.

Section 2. PENINSULAS OF EUROPE.

Scandinavia, 262. — Jutland, 272. — Bretagne, 274. — Spanish Peninsula, 276. — Italy, 283. — The Turco-Grecian Peninsula, 290. — The Crimea, 296.

Section 3. MOUNTAINS OF EUROPE.

The Alps, 298. — The Jura, 306. — The Vosges — Cote d'Or, 307. — Cevennes — Auvergne — Limousin, 308. — Black Forest — Rauke Alp, 309. — Erz-Gebirge — Sudetic Mountains, 310. — Moravian Mountains, Bohemian Forest, 311. — The Harz — Carpathian Mountains, 312. — Scandinavian Mountains, 313. — Pyrenees — Cantabrian — Iberian Mountains, 314. — Sierra Guadarama — Morena, 315. — Nevada — The Apennines, 316. — Dinaric Alps, 317. — Balkan Mountains — Pindus, 318.

Section 4. PLATEAUS OF EUROPE.

Swiss Plateau, 319. — Plateau of Bavaria, 320. — Bohemia, 321. — Plateau of Transylvania — Old Castile, 324. — New Castile, 325.

Section 5. PLAINS OF EUROPE.

Plain of Russia, 326. — Germanic Plain, 334. — Holland and Belgium, 336. — Plains of France, 339. — Rhine — Hungary, 342. — Plain of Wallachia, 345. — Arragon, 346. — Andalusia — Plain of the Po, 347.

Section 6. LAKES OF EUROPE.

Lakes of the Swiss Plateau, 348. — Lakes of Italy, 350. — Lakes of Hungary — Russia, 351. — Lakes of Sweden, 352.

Section 7. RIVERS OF EUROPE.

Rivers which flow into the Arctic Ocean — the Baltic Sea, 353. — Rivers of the North Sea, 354. — Rivers of the English Channel — of the Atlantic Ocean, 356. — Rivers of the Mediterranean, 358. — River of the Caspian, 362.

Section 8. ISLANDS OF EUROPE.

Islands of the Arctic Ocean, 362. — Islands of the Atlantic Ocean, 364. — Anglo-Norman Islands — Islands of the Baltic, 373. — Islands of the Mediterranean, 374.

CHAPTER IX.—THE CONTINENT OF AMERICA,.....380

Section 1. EXTENT AND GENERAL FEATURES, 380.

Section 2. BAYS AND GULFS OF AMERICA.

Hudson's Bay — Gulf of St. Lawrence, 381. — Gulf of Mexico — Caribbean Sea, 383. — Gulf of California, 385.

Section 3. PENINSULAS OF AMERICA.

Labrador, 386. — Nova Scotia, 390. — Florida, 392. — Yucatan, 397. — California, 399. — Russian America, 400.

Section 4. — MOUNTAINS OF AMERICA.

The Andes, 401. — Rocky Mountains, 410. — Appalachian Mountains, 411. — Cordillera of Venezuela, 412. — Parima Mountains, 413. — Mountains of Brazil, 414.

Section 5. PLATEAUS AND DECLIVITIES OF AMERICA.

Terraces of Chili, 415. — Plateaus of Bolivia, 419. — Peruvian Plateau, 423. — Plateau of Quito, 426. — New Granada, 428. — Plateau of Central America, 430. — Plateau of Anahuac or Mexico, 433. — New Mexico, 439. — New California, 440. — Oregon, 443. — Plateau of Brazil, 445.

Section 6. PLAINS OF AMERICA.

Patagonia, 450. — Pampas of La Plata, 452. — Maritime Plain of Brazil, 460. — Plains of Guiana, 469. — Llanos of Orinoco, 474. — Plain of Magdalena, 476. — Valley of the Mississippi, 477. — Atlantic Plain, 484. — Basin of the St. Lawrence, 491. — Northern Plains, 495.

Section 7. LAKES OF AMERICA, 503.

Lakes of the Northern Plain of North America — The Great Lakes, 504. — Lakes of Mexico, 507. — Lake Nicaragua — Maracaybo, 508. — Titicaca, 509.

Section 8. RIVERS OF AMERICA.

Rivers which flow into the Arctic Ocean, 509. — Rivers of the Atlantic Ocean, 510. — Rivers which flow into the Pacific Ocean, 516.

Section 9. ISLANDS OF AMERICA.

Arctic Lands, 516. — Greenland, 518. — Newfoundland, 521. — Bermudas — Bahamas — Greater Antilles, 523. — Lesser Antilles, 527. — Falkland Islands — Terra del Fuego, 529. — Chiloe, 530. — Juan Fernandez — Gallapagos — Alcutian Islands, 531.

CHAPTER X.—OCEANICA,..... 533

Section 1. DIVISIONS, 533.

Section 2. CENTRAL OCEANICA.

Australia, 533. — New Guinea, 569. — New Britain, 574. — New Hebrides — New Caledonia, 575. — Feejee Islands, 576. — Van Diemen's Land, 578.

Section 3. WESTERN OCEANICA.

Isles of Sunda, 579. — Moluccas, or Spice Islands, 587. — Celebes — Borneo, 591. — Philippines, 593.

Section 4. POLYNESIA.

Sandwich Islands, 596. — Marquesas, 598. — Low Islands, 599. — Society Islands, 600. — Austral Islands — Cook Islands, 602. — Navigator's — Friendly — New Zealand, 603. — Archipelago of Magellan — Marianne — Carolines, 609. — Pelew Islands — Mulgraves, 610.

Received of the Treasurer of the
Board of Directors of the
City of New York
the sum of \$100.00
for the year ending
June 30, 1875

Wm. A. Rorer

City of New York

Witness my hand and seal
this 1st day of July 1875

Wm. A. Rorer
Mayor of the City of New York

Attest:
John A. B. Smith
City Clerk

John A. B. Smith
City Clerk

John A. B. Smith
City Clerk

John A. B. Smith
City Clerk

John A. B. Smith
City Clerk



THE GEOGRAPHY OF NATURE.

CHAPTER I.

THE EARTH AND THE PLANETARY SYSTEM.

GEOGRAPHY is a description of the earth, and of the different parts of its surface.

The earth seems to us very great, and yet in reality it is one of the smallest globes which exist in space; it is as a point in the immensity of the universe. To form an idea of it, represent to yourself that a body of the same size as the sun would be equal to more than 320,000 globes of the size of the earth.

PLANETARY SYSTEM. — Our earth is not a body isolated in space. It forms part of a body of stars which compose what is called our *solar* or *planetary system*, and all revolving around the sun, from which they receive their beneficent heat and shining light. The sun, which is the centre of our planetary system, is not the centre of the universe, as was for a long time supposed; it seems to move in space with all the celestial bodies, which it draws in its train. Thus the entire solar system, which appears so immense to our feeble sight, (even aided by the most powerful telescopes,) occupies but a very small space in the universe. "*Lo, these are parts of his ways, but how little a portion is heard of him!*" Such was the language of the holy man Job, many thousand years ago. Beyond the sun, beyond even the remotest space, which our most powerful instruments enable us to penetrate, other suns or stars exist in innumerable multitudes, around which doubtless revolve planets dependent on each of them. We can scarcely conceive of the distance that separates us from these sparkling con-

stellations, which on a clear night inspire us with so much admiration. Learned men affirm that it takes no less than three years for the light of the nearest of these stars to reach us; and yet light requires only eight minutes to accomplish the distance between the sun and the earth: in other words, it has been estimated that an ordinary locomotive would occupy more than 83,000,000 of years in travelling such a distance. We cannot imagine the incredible distance of those suns which our most powerful instruments can scarcely render visible. How great then is that God, whose wondrous works "*the heaven of heavens cannot contain,*" "*which doeth great things, past finding out, yea, and wonders without number.*" (Job ix. 10.)

After this glance at the innumerable worlds which people the firmament, let us return to our solar system. It is composed of four kinds of stars — the *sun*, the *planets*, the *satellites* of planets, and finally, the *comets*.

SUN. — The sun, the centre of the whole system, forces the planets and comets to revolve around it by the *attraction* which it exercises over them. It appears to be an opaque body, surrounded by a luminous atmosphere or cloud, which communicates light and heat to all the neighboring planets. By the aid of immense dark spots, which by means of the telescope have been discovered on the surface of this luminous atmosphere, it has been ascertained that the sun turns once upon its axis in twenty-five days and a half.

PLANETS. — There are 28 planets now known; some very small, and visible only by the aid of excellent telescopes; others large and perfectly clear to the naked eye: thus Jupiter, the largest of all, is 1470 times the size of our earth. Planets are *opaque* bodies; that is to say, destitute of natural light, and only reflecting to us that which they borrow from the sun. Now, almost every year, some new planet is discovered.

SATELLITES. — The name *satellites* has been given to other smaller stars, which revolve around several of our planets, and accompany them in their course around the sun. The Earth has one — the *Moon*; *Jupiter*, four; *Saturn*, seven; *Uranus*, six: around the planet Saturn, moreover, an immense double ring may be seen to revolve. Of all these satellites, the moon is the most

interesting to us, because it is comparatively near, and exercises a certain influence upon our earth. The moon revolves around the earth in the space of about a month. Like us it draws its light from the sun, and presents to us, according to its position, different appearances, which we call *phases*. When it appears between the sun and the earth it is invisible, the illuminated part being turned towards the sun; there is then a *new moon*. In this case the moon may hide the sun from us more or less completely, occasioning what is called an *eclipse of the sun*. When the earth, on the contrary, passes between the sun and the moon, the whole illuminated face of the latter being turned towards us, it appears perfectly round, and we then call it *full moon*. It sometimes happens in this position that the moon passes into the shadow of the earth, and cannot then receive the rays of the sun; in this event there is an *eclipse of the moon*. When the moon is in the intermediate positions, and shows us only one half of its illuminated face, it is said to be in its *first* or *last* quarter.

COMETS. — To the last order of celestial bodies belonging to our solar system has been given the name of *comets*. They are singular bodies, always enveloped in a kind of shining *mantle*, usually terminating in a long, luminous train, which is called their *tail*. Several hundreds of them have actually been counted. They revolve around the sun, but sometimes wander to a great distance from it. It is a mistaken idea to suppose that the approach of comets diffuses warmth over our globe. They are not large enough, and do not appear to be possessed of sufficient heat.

DOUBLE MOVEMENT OF ALL THESE STARS. — As a top, thrown with force, in escaping from your hand describes circles of greater or less extent upon the floor, and at the same time turns rapidly upon its own axis, or as a ball, hurled by you into space, turns upon its axis in describing a half circle, so all the stars of our solar system have a double movement: they turn upon themselves, and at the same time describe around the globe, which serves for their centre, curves more or less elongated, which are called *ellipses*.

Two very simple forces are sufficient to produce the elliptical movement, and to create that majestic harmony whereby the heavens reveal the wisdom of the Creator. On the one hand,

the sun *attracts* the other planets, (as the magnet attracts the steel,) and prevents their wandering from it; this is what is called the force of *attraction*, which, if it operated alone, would precipitate all these globes together, and produce chaos. On the other hand, each star, in its rapid movement on its axis, has a tendency to diverge, and escape far from its centre in a straight line, by virtue of another force, opposed to the first; precisely as, when you turn a sling, the stone strives to escape in a direct line, and only continues to turn around with your arm because it is retained by the cords which you hold in your hand. By the combination of these two opposite forces the movements of the celestial bodies proceed with such perfect regularity that men can calculate, many centuries in advance, the precise moment of an eclipse, the return of a comet, the instant of the rising of sun or moon, on such a day or in such a place.

Such order and harmony does the spectacle of the firmament every where present; and if the grandeur and infinite number of its worlds have already impressed us with the power of the Almighty, his wisdom will manifest itself no less forcibly to our view when we proceed to consider the wonderful order of these innumerable worlds, which, borne through the heavens for thousands of years with a swiftness that startles our imagination, and unceasingly revolving around each other in various directions, eternally pursue, without violent shock, without confusion, or even a moment's delay, the march which infinite wisdom assigned to each in the first days of creation. Truly "*the heavens declare the glory of God, and the firmament showeth his handiwork. Day unto day uttereth speech, and night unto night showeth knowledge. There is no speech nor language where their voice is not heard; their line is gone out through all the earth, and their words to the end of the world.*" (Psalm xix.)

CHAPTER II.

THE EARTH AND ITS MOTIONS.

THE earth is, then, as we have seen, a *planet*. It is nearest the sun, after Mercury and Venus, and in size ranks next to Jupiter, Saturn, and Uranus. It has the moon for a satellite, whose mild light dissipates the obscurity of our nights, and divides our year into twelve *months*, because the moon repeats its course around the earth twelve times while the latter performs its annual revolution around the sun.

Like all the other planets, the earth is spherical, or round, in form, but slightly flattened at the two opposite points which are called *poles*. Perhaps my *young* readers find it difficult to believe that the earth is round; and for a long time people would not admit it. Yet there are abundant proofs of this fact. As in the eclipses of the moon the shadow of the earth always forms a circular spot upon the moon, it then follows that the earth itself must be round. As we watch a vessel going out of port, its hull first disappears, then its sails, and lastly the extreme end of the main mast, which would not be the case if the earth were flat. Moreover, for three hundred years voyagers have made the circuit of the world in every direction, thus proving beyond a doubt its spherical form.

The earth is about 25,000 miles in circumference.

Like all the planets, our globe has two movements — that of *rotation*, by virtue of which it turns upon its axis, and that of *translation*, by which it revolves around the sun. It occupies a duration of 24 hours in accomplishing a movement of rotation upon its axis; whence it results that during nearly half the time the part of the earth which we inhabit is turned towards the sun, and it is *day*; after which it is in its turn carried to the opposite side, and then it is *night*. The earth is 365 days and 6

hours in accomplishing its grand movement around the sun. This revolution forms the *year*, and gives rise to the *seasons*.*

By its movement of rotation the points most remote from the *axis of the earth* traverse a space of 25,000 miles in 24 hours, which constitutes a speed of more than 1000 miles an hour, while the utmost speed attained on railroads does not exceed 60 miles an hour. We do not perceive this rapid motion, because the clouds, land, and water are carried with us. When borne rapidly along in a steamboat, we are sometimes unconscious of the motion, because the persons and objects on board are transported with us, and appear to remain immovable.

CARDINAL POINTS. — It was found necessary to establish certain fixed points on our globe, known every where by the same names, and by means of which the situation of any place on the earth could be defined. These fixed points are called the four *cardinal points* — the *north*, *south*, *east*, and *west*.

The *north* is towards that pole which is opposite to us when we turn our back to the sun at noon, and which is designated by the name of the *arctic pole*, because it is situated opposite a constellation of stars called in Greek *Arctos*, (a bear.)

The point at the opposite extremity is called *south*, because it is the direction in which we see the sun at noon. This southerly point corresponds with the opposite pole, which is known by the name of the *antarctic pole*.

The *east* is the point at which we see the sun *rise*, whilst the *west* is the point at which the sun *sets*, or rather appears to set.

To define with more precision the direction of places, we again distinguish between the four cardinal points other intermediate points; as, the *north-east*, between the north and east, the *north-west*, between the north and west, the *south-west*, between the south and west, and finally the *south-east*, between the south and east.

It is easy to *learn one's position*, that is, to discover these different points during the day, by means of the sun. On a clear

* An ordinary year is composed of 365 days; the 6 hours not included in this calculation form, at the end of 4 years, 24 hours, or a day. Thus we have every four years a year called leap year, or 366 days.

night we may have recourse to the polar star, easily recognized by its proximity to the brilliant constellation of the Great Bear. But in foul weather a position can only be recognized by means of the *compass* — an admirable instrument, whose magnetic needle has the singular property of always turning towards the north.

LATITUDES AND LONGITUDES. — But men, not satisfied with establishing general positions or points by which places could be defined, found it necessary to fix in an exact manner the precise situation of each place; and for this purpose the globes which represent the earth have been divided by imaginary lines into a great number of perfectly defined circles. Thus at an equal distance from the poles we suppose a great circle called the *equator*, or *equinoctial line*, which divides the earth into two equal parts — the *northern* and the *southern hemisphere*.

All the circles which cut the globe in the same direction as the equator are *parallels* to the equator. The distance of a place from the equator is called its *latitude*, (*north* or *south*, according as it is situated in the northern or southern hemisphere.) Latitude is calculated by degrees; and it has been decided to establish 90 degrees of latitude north, and 90 south of the equator. These degrees are denoted on all the maps and charts which represent the whole or any part of the terrestrial globe.

On the other hand, a circle which cuts the globe in an exactly opposite direction, that is to say, perpendicularly to the equator, passing through the two poles, is called a *meridian*. We may suppose as many of these circles as we please; each of them will divide the globe into an *eastern* and *western hemisphere*. It has been thought advisable, however, to have only 360 of them, one of which, denoted on the charts by a cipher, is the first, or the one from which all the others are reckoned, both east and west. The distance of a place from the first meridian is called its *longitude*, (*east* or *west*, according as the place is situated east or west of the first meridian;) and as longitude is reckoned by degrees, there are 180 degrees of east and the same of west longitude.

ZONES. — Among the parallel circles of which we have just spoken, there are four of more importance than the rest, and

which are distinguished by particular names : these are the *tropics of Cancer* and *Capricorn*, the former north and the latter south of the equator ; and the *Arctic* and *Antarctic polar circles*, as far from the poles as the tropics are from the equator. These four circles establish a division of the earth into five grand *zones* ; the one between the two tropics called *torrid*, (or burning,) exposed to the perpendicular rays of the sun, sometimes presents dry and parched regions, and sometimes the most magnificent vegetation. Summer is perpetual there, and the rainy season takes the place of winter. Next come the two *temperate zones* ; the *north temperate zone*, between the tropic of Cancer and the Arctic polar circle, and the *south temperate zone*, between the tropic of Capricorn and the Antarctic polar circle. These temperate zones present neither the arid deserts nor the superb vegetation which is met with in the torrid zones ; they are, however, the most blessed and highly favored of all. Lastly, the *north* and *south frigid zones* extend between the polar circles and the poles. These are barren countries, which never receive the rays of the sun except obliquely and for a short time, and where all nature seems completely benumbed by perpetual frosts.



CHAPTER III.

GENERAL OBSERVATIONS ON THE CONTINENTS.

If you cast a glance over a map of the world, you will observe that the surface of the globe is divided into large bodies of land, which are called *continents*, and great basins of water, called *seas*. Moreover, as in the portions covered with water you will remark still smaller bodies of land, which rise above the surrounding waves, and are called *islands*, you will likewise perceive in the midst of the continents isolated spaces covered with water, which are called *lakes*. The sea and land often project into each other. The sea, penetrating into the interior of the continents, there forms *gulfs*, *bays*, or even *inland seas* — small seas surrounded by land, and only communicating with other waters by narrow arms of the sea, which are denominated *channels* or *straits*. Continents likewise project more or less prominent points into the bosom of the waters, which are known by the name of *capes* or *promontories*, and even sometimes form *peninsulas* in the sea; that is, projections which are only connected with other portions of land by a strip of land, or *isthmus*. Three quarters of the surface of our globe are covered by the waters of the *ocean*, a vast sea, from which arise, like so many islands, numerous bodies of land, of every size and proportion. The two most considerable of these terrestrial bodies compose the *Old World*, so called because it was the cradle of the human race and of the most ancient people, and the *New World*, thus designated because only discovered by Europeans in comparatively modern times. Strictly speaking, we have only these two continents; but in ordinary usage, five are counted, which are called the five *divisions of the world* — *Asia*, *Africa*, *Europe*, *America*, and *Australia*. *Asia*, which forms all the north-eastern part of the ancient continent, is the largest of the five divisions of the world. There lived the first men, and

from thence, after the deluge, they were distributed over the whole surface of the earth. Asia possesses all climates, is capable of all kinds of cultivation, and every thing there exhibits grand proportions. It is very cold in the north and extremely hot in the south of Asia; there are found very vast plains and the highest mountains in the world; and at the same time that it has in many places a soil of great fertility, it also contains elsewhere perfectly arid deserts.

Africa, situated south-west of the Old World, with which it is only connected by the sandy Isthmus of Suez, is much smaller than Asia. With its coasts destitute of gulfs or projections, it has much less the appearance of a continent by itself, than of a simple peninsula of Asia. It is the hottest, or rather the most scorching, of the five divisions of the world. Its coasts are generally very fertile, but the interior contains the largest deserts that are found on the globe.

Europe, situated north-west of the ancient continent, is one of the smallest divisions of the world; but it is the most important, owing to its civilization and the activity of its inhabitants. The climate is temperate, and the productions are not very manifold; but it is the best cultivated, and the most embellished by the arts and labors of the human race. This continent at the present time exercises the supremacy over the rest of the world.

America is a double continent, composed of two peninsulas united by the rocky Isthmus of Pänamä: *North America* and *South America*, the latter of which has coasts as irregular as those of Africa. This is, next to Asia, the largest of the divisions of the world. It is very cold at the north and at the opposite extremity, while towards the centre the heat is very great. The soil is generally moist, and this continent possesses the largest rivers and lakes, and the most exuberant vegetation.

South-east of Asia is found still another small continent, called *Australia*, from its situation in the southern (austral) hemisphere, and which is the principal portion of the fifth division of the world, called *Oceanica*, or islands of the great ocean. These islands, although situated in the vicinity of the equator, have not a burning climate, on account of the cool winds which the sea

every where affords, and they generally possess a luxuriant vegetation. But Australia presents in its interior immense deserts of sand, subject to a scorching temperature, at the same time that its coasts offer a very agreeable climate and the advantages of a fertile soil. This country exhibits strange peculiarities in its animals and vegetables, of which we shall speak more particularly hereafter. Nevertheless, its fertility, and especially the recent discovery of its abundant gold mines, give promise of Australia's one day becoming a new Europe, reproducing its advanced civilization, its manners, its religion, and also its vices.

We include with each of these five continents the islands which lie contiguous. These islands, numerous as they are, present an insignificant extent of surface in proportion to that of the continents, as they are only equivalent to a twenty-fourth part of them. Land is much more distributed in the northern than in the southern hemisphere — the latter being almost entirely occupied by the waters of the ocean. The form of the continents is also extremely irregular; they only resemble each other in this respect, that they generally terminate at the south in peninsulas, tapering in very decided points.

The diversities which the continents present in their interior are no less numerous. Sometimes they rise slightly above the level of the sea, and form *plains*, which take different names, according to their aspect and character; when sandy and dry, producing only grass, and no trees, they are called *steppes*; *savannas*, when they are moist and covered with abundant herbage; *llanos*, when they are only clothed with vegetation during the rainy season, and afterwards become parched and arid; finally, *deserts*, when their rocky or sandy surface is destitute of water and verdure. Sometimes, on the contrary, continents form *high lands*, among which may be distinguished *plateaus*, or regions usually enclosed by mountains, the whole of which is elevated, and *mountains*, or systems of mountains, which rise to considerable heights in certain places above the level of the sea.

Mountains, closely inspected, appear of enormous magnitude; but their size is diminutive in proportion to the whole body of the terrestrial globe. They have often been compared to the protuberances which are found on the surface of an orange; but

perhaps we should give our *juvenile* readers a more exact idea of the insignificance of their dimensions by stating that if the entire chain of the Pyrenees (situated between France and Spain) were levelled over the whole of France, the soil would only be raised 9 feet; and if the Alps, the principal chain of mountains in Europe, were in like manner levelled over all the European soil, the latter would be raised only 19 feet and a half.

At first it may seem incredible to the imagination that there are *portions of the continents below the level of the sea*. There are, however, in Western Asia, around a great lake called the Caspian Sea, and in the vicinity of the celebrated lakes of Tiberias and the Dead Sea, countries of some importance which are much below the level of the sea; but the mountains or high lands which separate them from the ocean furnish barriers to the waters, which would otherwise overwhelm them.

The temperature of the continents varies according to their latitude and their height above the level of the sea. All places which are in the same latitude do not, however, enjoy the same temperature; thus, of three cities, situated, the first in Asia, the second in Europe, and the third in America, the first and last will enjoy a much cooler climate than the European city, although all three may be in the same latitude. The proximity of oceans, the exposure to the winds which come from the poles or the equator, and the elevation of the soil, exert an immense influence over the temperature.

By digging into the heart of continents it has been ascertained that heat increases in the proportion of one degree to each hundred feet. There are now, in certain countries, mines whose pits descend to a depth of more than 2000 feet; in a country in Europe called Bohemia, there is one, now abandoned, which penetrates 3000 feet. At a depth of two miles, the earth must attain the temperature of boiling water, and at 20 or 25 miles depth, every thing, even the hardest metals, must be in a complete state of fusion. Finally, lower yet, liquids must be reduced to a gaseous state, and these gases or vapors, heated beyond all imagination, must acquire an inconceivable force. There then sometimes occur rapid movements of gaseous currents, which, gliding beneath the solid surface of the earth, agitate it, giving rise to *earthquakes*.

This surface is sometimes rent by the action of these vapors, or torn asunder in giving passage to the gas, which carries with it mineral substances in a state of fusion. There is thus established a certain communication between the interior of the earth and its surface. The inflamed and liquid masses overflow the limits of this yawning abyss, forming streams of *lava*, a substance which sometimes requires more than a year to cool, and which, slowly descending towards the neighboring plains, burns and destroys every thing which it encounters in its passage. Shocks of earthquakes, eruptions of volcanoes, the rivers of lava issuing thence, — all these astonishing phenomena have at different times thrown the neighboring population into consternation. There are now nearly 200 volcanoes in motion.



Volcanoes.

The extraordinary heat of certain springs which bubble up in different places, especially in the mountains, and sometimes in the cold waters of a river, is also attributed to a central fire which fills the interior of our globe. These waters are used both as drinks and baths for the healing of the sick. They are called *thermal* (or warm) springs, and some of them are of so high a temperature that the heat of the baths must be moderated in order to render them supportable. In certain places actual columns of boiling water are seen to burst from the earth, spouting up at intervals, with a deafening report, to a height of 120 or 130 feet. Such are the *Geysers of Iceland*, which thus shoot upwards near a volcano in the heart of a great island north-west of the European continent.

As we rise above the surface of the continents, we perceive, on the contrary, that the heat diminishes. Beyond a certain elevation the water is never in a liquid state, and snow is perpetual. The limit of these eternal snows varies with the latitude. In Europe it is at a height of about 8000 feet. Under the equator, in the vast chain of the Andes, which traverses all America, this limit is at a height of about 15,000 feet; while as we advance towards the north it gradually diminishes, and finally we arrive at regions where the cold is so continuous that water is always frozen even at the level of the sea.

The temperature and other physical circumstances exercise a marked influence upon the *organized beings* that inhabit the surface of the continents. Thus each zone has its special production of plants and animals. This distribution, however, is most apparent in the vegetable kingdom. In the frigid countries, plants are represented by species of the most simple organization — *mosses, lichens, gooseberries* and other berry-bearing shrubs, *birches*, and *dwarf willows*, which never exceed one or two feet in height. In proportion, on the contrary, as we approach the tropics, vegetation becomes more rich and varied; and wherever moisture and heat are favorably combined, the power of vegetation attains its utmost degree of perfection. Thus, in South America, on the eastern side of the Andes, plants develop with astonishing rapidity, and the *virgin forests* of those countries present a vegetation of a vigor elsewhere unknown. Vegetable

growth is generally most active where rain is most abundant, whilst from a complete absence of water there inevitably results a corresponding absence of vegetation.

After it has been said that in proportion as we rise the temperature sinks, you will not be astonished to learn that in ascending the sides of tropical mountains we may discover, successively, plants appertaining to almost all latitudes, from the palm trees, or magnificent flowers which grow in the plains at the foot of the mountains, to the mosses and polar lichens which cling to their lofty summits in the neighborhood of eternal snows. Thus, in ascending the Andes, the traveller may in one day observe all the phases of vegetation which he would discover in traversing thousands of miles of level surface in a northerly direction.

Animals are not as dependent as vegetables on the physical circumstances by which they are surrounded. They can survive a transportation from one zone or latitude to another, with the exception, perhaps, of a few delicate species accustomed to the heat of the tropics, and unable to support any material change. However, difference of climate exercises an influence upon animals of the same class, belonging to different countries. Thus the lion exists both in Africa and Asia, but that of Africa is the largest; the jackal is found likewise from the western extremity of Africa to the eastern extremity of Asia, but it differs sensibly in the two countries. Thus the climate and temperature of every land mark the animals which inhabit it with a distinct and characteristic stamp.

Of all organized beings *man* unquestionably ranks first in interest and importance. "Man," said the learned Humboldt, "is preëminently the citizen of the universe; he can live every where, because, wherever he is, he is in his natural sphere." By the aid of that power which constitutes his superiority over the rest of nature, he combats physical circumstances when they oppose him. In cold countries he shelters himself from the elements, creates artificial heat by the combustion of vegetable matter, and at the same time clothes his body in such a manner as to preserve it from the cold. In tropical countries, on the contrary, where the heat is intense, he collects around him every thing that can moderate or at least render it supportable. Man can accus-

tom himself to mountains and plains ; he can live equally well on a level with the sea and some thousands of feet above it.

But although man has learned how to adapt himself to the variations of place and climate, he has not been able to free himself from their influence. From cold to tropical countries, men are observed to vary in size, vigor, complexion, and character. In cold climates they are generally of small stature. Nature denying them vegetable nourishment, they are almost entirely sustained by animal substance, and their frames are perfectly habituated to it. It is in the temperate countries that man appears to be especially in his normal state. He subsists alike on animal and vegetable matter ; his physical strength is more fully developed, and his intellectual activity much greater also. The man of the temperate region is, in reality, master of the world : he has always taken precedence of the man of the tropics. Under the torrid zone the color of the skin has undergone a transformation. As we pass from the temperate to the hot countries, we observe an almost imperceptible transition from white to black. There the population subsist chiefly on vegetables, and their physical and intellectual activity is but little developed.

From the observation of the differences and analogies which exist among men on the surface of the whole globe, there has been established a classification of the human species into five great *races*, although it may be well to remark that it is impossible to fix a perfect line of demarcation between them, for there are always certain intermediate populations, which seem to belong to several races, and whom we are at a loss in what category to place. Moreover, in establishing this classification, more regard has been paid to the formation of the bones of the head than to the color of the skin.

The first of these races is the *Caucasian*, so called because its most perfect types, both of men and women, are said to be found in a chain of celebrated mountains, called the *Caucasus*, situated on the boundaries of Europe and Asia. The appellation of *white*, by which they are commonly designated, is not perhaps quite accurate ; for in the very warm climes of Africa are seen individuals of this race who are extremely brown, and almost black. This class, of which we form a part, occupy Europe, the north of Africa,

the western part of Asia, and the greater part of America ; it has the regular form and figure with which we are sufficiently acquainted.

The *Mongolian*, or *yellow race*, inhabit the eastern part of Asia. They are distinguished by their high cheek bones, eyes obliquely set, thick lips, black, but fine hair, and thin beard, almost entirely confined to the upper lip. Their skin is of a dark yellow, or olive color.

The *African*, or *negro race*, inhabit the centre of Africa. Their hair is woolly, crisped, and black, their nose flat, and skin black ; but that which particularly characterizes this race is the prominence of the lower jaw, and the thickness of the lips.

The *Malay race*, which derives its name from a peninsula situated at the south-east of Asia, (Malacca,) from whence it has been diffused to a distance, into a part of the islands of Oceanica, resembles the Mongolian in color, but possesses some of the physical and intellectual characteristics of the Caucasian race.

The *American race* is peculiar to the new world. It is now rapidly becoming extinct ; and the greater part of the inhabitants of America are Europeans, of the white race, who have been established there for a longer or shorter period as colonists, or descendants of ancient colonists. The red, copper complexion, black hair, and thin beard of the indigenous Americans would seem to ally them to the Mongolian race, if their nose and other features, as sharp as ours, and their large and full eyes, did not contradict the supposition, and correspond rather with the European form. .

Independent of these great races, we should mention numerous tribes which cannot be exactly classed with any of the races above indicated ; viz., the *Caffres* and the *Hottentots*, at the south of Africa ; the *Melanesians* and *Australasians*, in Oceanica ; and the *Hyperbore'ans*, at the north of the old world, all of whom seem to combine the characteristics of the different races. These classifications are then rather useful than strict, and in proportion as scientific researches multiply, this classification of races will become more difficult and less satisfactory. In the mean time, we shall often find it convenient to refer to them.

CHAPTER IV.

GENERAL OBSERVATIONS ON THE OCEANS.

THE greater part of the earth's surface is, as we have ascertained, occupied by the waters of *the ocean*. This universal sea, which surrounds all the continents, bears different names in different places ; but it is in reality every where the same, and we propose to consider it first in a very general manner, reserving for the following chapter a more minute description of each of the five great oceans, into which it is subdivided.

The oceans are every where in communication with each other, and every where on a level. Certain inland seas, however, whose communication with other seas is interrupted by islands or narrow straits, have a somewhat higher level. Thus the sea which separates Africa from Asia is, near the Isthmus of Suez, 27 feet and a half more elevated than that situated beyond this isthmus. Another inland sea, at the north of Europe (the Baltic) is 8 feet more elevated than the rest of the oceans.

TIDES. — There is likewise a periodical change of level on the surface of all open seas. This change of level constitutes the *phenomena of the tides*. The attraction of the moon raises the water during six hours every day, causing a movement of elevation, or a *flux*, particularly perceptible on the coasts and in sea-ports ; then, for six alternate hours, an abatement, a return to its level, or *reflux*. And as the moon in its motion around the earth is sometimes nearer and sometimes more remote, when its proximity is greatest, the attraction is most powerful, and the tides rise highest. Moreover, the sun, although at an infinitely greater distance, exercises a sensible influence upon our globe : accordingly, when the three planets appear on a straight line, the tides attain their extreme point of elevation, which necessarily occurs twice a year, in the spring and autumn. The tide, however, does

not return regularly at the same hours every day, but the two tides arrive at their height 50 minutes later than on the preceding day. This delay is explained by the fact, that the moon, which is the principal cause of the tides, each day delays its rising 50 minutes. The tides are inconsiderable in the open ocean, and of no force in the small inland seas; while on certain coasts, and in certain narrow seas, they rise even to a height of 60 or 70 feet. The tides render various services to man: on the low coasts he avails himself of them to force the water of the sea into ditches, where it evaporates and leaves a deposit of salt. There are a great number of ports which can only be entered at high tide, because the channel is shallow: without the aid of the flux, vessels could not ascend the current of rivers. In many harbors advantage is taken of the low tide for carrying on certain kinds of shell fishery.

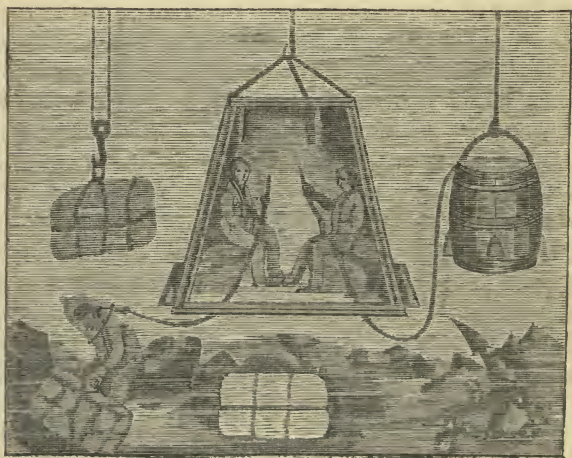
WAVES.—The atmospheric currents, or winds, also create changes of level, or *waves*. The highest seldom exceed 33 feet; but to this should be added the depth of the watery valley which separates each wave from the succeeding one. However, the most violent waves only agitate the surface of the ocean: at a depth of 100 feet the water remains calm, in spite of the most boisterous winds.

DEPTH OF THE SEA.—It is very difficult to ascertain the depth of the sea. In many places, its bottom has not been reached by any experiments of sounding. In the tropical seas, depths have been attained exceeding 24,660 feet; that is, about 57 times the height of the cathedral of Strasburg, the highest structure in the world next to the pyramids of Egypt. There are, then, probably, at the bottom of the sea, valleys and hills, inequalities of land as considerable as on the surface of the continents.

When the summits of submarine mountains rise above the sea, they frequently form chains of islands, whose direction clearly indicates that of the submerged mountains of which they form a part. A glance at a map of the world will enable you to apply this observation to numerous clusters of islands which are found east of Asia, for instance, and all of which appear to be a continuation of chains of mountains on the continent. If, on the contrary, submarine mountains are not high enough to appear

above the water, they form *shoals*, which sometimes extend beneath the waves for a considerable distance. One, for example, stretches the whole length of Oceanica, upon which a great number of vessels have been wrecked. These rocks are often level with the water, and form *ledges* and *reefs*, on which the waves break with fury, serving as a warning to mariners.

The bottom of the sea would, doubtless, present a very curious spectacle; but it is almost completely hidden from our view. Divers cannot descend to a depth of more than 100 feet, even with the diving bell invented by Halley, and by the aid of which they can remain under water more than an hour; while without this, ordinary divers can continue under water only 2 minutes, notwithstanding the feats related of them.



Diving Bell.

SALTNESS OF THE SEA. — The waters of the sea hold in solution numerous mineral substances, and especially a great quantity of salt. They are consequently both salt and bitter, and cannot be swallowed without nausea. Mariners, although navigating the open sea, are thus liable to die of thirst, if their supply of fresh water becomes exhausted. A method has been discovered of rendering salt water potable by distillation; but this

operation requires too much labor and fuel to be practised on a great scale.

This saltness does not prevent the water of the sea from corrupting. If undisturbed for fifteen or twenty days, it would become so fetid as to make it fatal to inhale its odor. It is impossible to exist long in the hold of a vessel containing stagnant water. Therefore, were it not for its tempests and various motions, the ocean must become decomposed and corrupt. The sea is not every where equally salt: its saltness is nowhere greater than under the poles and at the equator; and the reason of this is, that the salt water being much more heavy and dense than the fresh water, neither evaporates nor freezes. Accordingly, in the polar seas, the fresh portion of the water alone congealing, transfers its salt to the neighboring portions, and the saltness of the latter is proportionally augmented. In like manner, in the tropical seas, the portions of water which evaporate beneath the action of a burning sun abandon their salt to the lower beds of water, thereby rendering them more briny. It is almost impossible to account with any certainty for the saltness of the sea. Perhaps it proceeds simply from abundant salt mines existing at the bottom of the ocean.

EVAPORATION OF THE SEA. — The evaporation of the waters of the sea, and their transformation into rain, snow, or ice, is one of the phenomena in which the wisdom and providence of the Creator are most signally manifested. When we consider the vast and innumerable rivers which are unceasingly bearing their enormous tribute to the ocean, it seems as if the basin of the sea must finally overflow and devastate its shores. God has, however, in this as in every other contingency, admirably provided for mankind. The heat of the sun incessantly distils from the surface of seas or lakes quantities of vapors proportionable to the body of water conveyed into them by the rivers. These vapors diffuse a beneficent moisture in the atmosphere; dissolving in dew during the coolness of night, they refresh the plants and the earth, and, collected in small drops and clouds, descend in the form of rain to nourish the springs, revivify vegetation, and spread fertility. Even the eternal snows and glaciers were designed by the Creator to render precious services to the inhabitants of the

neighboring plains. Instead of rushing impetuously from the mountain tops, inundating and laying waste the countries which they are designed to fertilize, the water, which descends upon the lofty summits in the form of snow and rain, is congealed by the cold, and remains suspended in frozen masses on the sides of the mountains; gradually dissolving, and furnishing abundant water during the summer, precisely at the period when the heat threatens to dry up the springs. These vapors, suddenly consolidated by currents of cold air, may indeed be transformed into devastating hail, and these beneficent reservoirs of snow and ice, too rapidly dissolving, occasion disastrous inundations — calamities with which the Almighty sometimes judges proper to visit a corrupt world; but we know that he does not willingly afflict the children of men, and that “his anger endureth but a moment: in his favor is life.” Ps. xxx., 5.

TEMPERATURE OF THE SEA.—The temperature of the sea varies with its situation and depth. It is generally more uniform than that of the continents, its facility of motion preventing any very material variations. Although subject to the influence of the seasons, it is much less affected by them than the atmosphere; thus in summer the sea cools the air of the continent, and in winter modifies its severity. The proximity of the sea then renders the climate of the coasts mild and uniform.

Between the tropics, the temperature of the sea diminishes with its depth. After reaching a certain depth, it is of an equal temperature, a few degrees above freezing point. In the polar seas, on the contrary, the water is coldest on the surface; inso-much that it is covered with vast fields of ice, which, like two white cupolas, crown the two extremities of our planet.

CURRENTS OF THE SEA.—The differences of temperature, of which we have spoken, are one of the principal causes of the *currents* which are produced in the ocean. In the tropical zone, the motion of the earth occasions one of them which flows from east to west, and bears the name of the *equatorial current*. The configuration of islands and coasts often modify it extremely. Thus, commencing on the coasts of Africa, this current, after arriving on the eastern coast of South America, divides into two branches, one of which directs its course south-

westerly, and makes the circuit of America; while the other, skirting at the north-west the coasts of North America, makes the circuit of the vast inland sea which separates the two Americas, issues thence with great rapidity, and shapes its course towards the coasts of Africa and the north of Europe, where it forms, near a country called Norway, a terrible whirlpool, known by the name of the *Mæl'strom*, in which the waters revolve continually, making a circuit of many leagues, and afterwards breaking on the rocks.

There are, besides, many other important currents. There is generally an upper current, which conveys to the polar seas the warm water of the tropics, and an under current, bearing from the poles to the equator the cold and heavier water of the polar regions. These currents are, however, modified in their progress both by the winds and by the configuration of land and sea.

WATERSPOUTS.—One of the most terrible and wonderful



Waterspout.

phenomena which occur on the surface of oceans is the production of *waterspouts*. A volume of water, of greater or less height, rises above the surface of the sea. This movable column

turns upon itself, traversing immense distances with incredible rapidity. A cannon or musket shot is sometimes sufficient to dissolve it. Science has not yet furnished any precise explanation of this singular movement, comprehending such a considerable body of water.

ANIMATED NATURE AT THE BOTTOM OF THE SEA.—Both animals and vegetables, of infinite variety, are found in the ocean; and life is there, perhaps, more variously represented than on the continents. The seas, then, have also their classified inhabitants; and, moreover, a kind of analogy exists between the classification of marine and terrestrial animals. In the water, however, the conditions of life are quite the reverse of those on the land. In the latter the animal must live in a gaseous fluid—air; in the former, in a liquid fluid—water. It seems as if divine wisdom had taken a type or model for each, and had suitably qualified it, whether for terrestrial or aquatic life.

One of the elements of which the air is composed is indispensable to life; the terrestrial animal is endowed with a peculiar organ for containing this air, in order that the vital element may be extracted from it, viz., the lungs. The marine animal has an analogous organ, the gill, which is constantly in contact with the water, and in this perpetual contact absorbs the small quantities of atmospheric air dissolved in the liquid, appropriating to itself the vital substance. Every where in nature do we find these laws of harmony, which the Creator seems, as it were, to have imposed upon himself, in accordance with which, however, he has infinitely varied the productions of his omnipotence and wisdom. Thus throughout the animated kingdom there exists a perfect and harmonious bond.

In the water, as on land, we find mammals, (animals which nurse their young.) The representatives of this class among marine animals are the largest in the ocean—the *whale*, the *cachalot*, *seals*, *dolphins*, &c.

The fish constitutes the most perfect type of the aquatic animal. Its form and dimensions are of infinite variety, but the organization most adapted to its life in the water is always preserved.

Sea tortoises, numerous species of which inhabit the seas of

tropical countries, are, in the ocean, the principal representatives of the large class of REPTILES.

Birds, even, although especially destined for flight, are sometimes so organized that their life is naturally aquatic. *Grebes* and *herons*, for example, swim on the surface of the water, or dive beneath, and can exist during long intervals in the liquid element.

The numerous branch of the articulate animals is largely represented in the water.

The crustacea are essentially aquatic, such as *crabs*, *lobsters*, &c.

The mollusks represented on the continents by the snail, &c., are found in innumerable varieties in all seas. All the animals known by the name of *shell fish* belong to this branch.

In the depths of ocean nature conceals those strange creations yet ill defined by science, and which seem to serve as intermediates between the two great classes of animal and vegetable organization; these equivocal beings are called zoöphytes, (or animal plants.) The *polypi* and *sponges* are examples of this class, of which, as of all the preceding animals, we shall speak more particularly in the following chapters.

We have discovered that there are mountains and valleys at the bottom of the sea, as well as on the surface of the continents. As on the surface of our valleys and mountains, there also are found life and motion. Marine plants, such as the *algæ* or *fuci*, there form actual forests. That which is called *lamina*, for example, often extends its ramifications, proceeding from one stalk, a *quarter of a league* in distance. Among these submerged branches, animals of endless varieties find their existence, there adhere, live, and die, and their accumulated remains furnish new elements for vegetable life, on which successive generations are born and die. Fish glide amid the foliage of these marine forests as birds sport in their native groves. On the bottom of the sea exist and creep innumerable shell fish, which, although destined to live always in the depths of the ocean, present, on the exterior of their stony covering, colors whose brilliancy and vividness are nowhere else encountered. To the sides of submarine rocks are attached infinite multitudes of polypi, who increase, extend, and ramify like the mosses and lichens which cling to the rocks of our terrestrial

mountains. Every where are found life and motion, every where innumerable beings, organized with perfect wisdom for the purpose (often unknown to us) assigned them by the Creator.

In the ocean, moreover, exist countless multitudes of beings of such minute dimensions as to escape our usual means of appreciation. "Microscopic *infusoria* present in their whole dimensions," says M. Humboldt, " $\frac{1}{1500}$ of a millemetre," or, in other words, as many of these animalcula as there are men upon the face of the earth would hardly compose a body of the size of a pin's head. And yet there are rocks, extending more than a quarter of a league in every direction, composed entirely of their petrified and accumulated remains. The human mind is confounded when it seeks to form an idea of the incredible fruitfulness of creation.

These inexpressibly little beings sometimes live on the bottom of the sea, and sometimes on its surface. Among them are *monads*, which present very remarkable luminous properties. Sometimes myriads of them are seen floating on the water, and, fluctuating with the waves, manifest their presence, at a distance, by the phenomenon of *phosphorescence*. The sea is then, in the middle of a dark night, illuminated far and wide. Each wave, unrolling, reveals a sheet of silvery light, and the conflicting billows create transient illuminations, which appear and disappear, producing rapid alternations of light and darkness. The water thus seems in strange contrast with its habitual character to engender light.

Thus, the more we study nature, the more are we impressed with the multiplicity of its resources and the infinite variety of its productions, and are led to exclaim with the prophet king, "O Lord, how manifold are thy works! in wisdom hast thou made them all: the earth is full of thy riches."

CHAPTER V.

DESCRIPTION OF THE OCEANS.

SECTION 1. THE NORTHERN OCEAN. — A great portion of this ocean, which lies north of the old and new world, is covered with ice, which sometimes forms vast unbroken fields, over which



Scene in the Northern Ocean.

a carriage might roll for a length of thirty or forty leagues in a straight line. Icebergs of every form are sometimes seen floating on the surface of the water, representing houses, towers, or the spires of a cathedral, a collision with which would instantly dash the strongest built vessel to pieces. These blue, transparent, floating bodies of ice, are sometimes driven by the currents even into the temperate seas, where they speedily dissolve, not, however, without endangering ships which unexpectedly encounter them.

During the heat of summer the upper portions melt, and the waters descend from their summits, forming immense cascades in the sea. The dazzling whiteness of the spray presents an admirable contrast to the azure blue of the congealed and floating mass.

These icy plains usually break up and disperse in the month of June. Then commences the heat of a burning summer, which lasts several weeks, during which the sun remains constantly above the horizon without setting. Advantage is taken of this short summer to pursue the whales even into the midst of these immense islands of ice. But towards the end of August, snow begins to fall, the cold resumes its empire, and the moisture of the atmosphere congeals in the form of little icy needles, which seem to pierce the skin; soon a uniform bed of ice again covers the sea; winter then reigns in all its horror, and the gloomy darkness of the night, which continues many months, is only dissipated by the brilliant light of the *Aurora Borealis*, which, of very frequent occurrence in the polar countries, sometimes diffuses its light even in our firmament, and always affords one of the finest spectacles in creation.

During these long and terrible winters, the unfortunate inhabitants of the islands or coasts washed by the Northern Sea remain immured and crowded together in their huts, the smallest apertures of which they carefully close. Their provisions, although kept in a place where a steady fire is maintained, are often frozen to such a degree that they can only be broken by an axe.

And yet *the providence of God has not left itself without witness* among the inhabitants of these icy regions. Trees cannot grow in these countries, the willows even attaining only a few

feet in height; but the currents of the ocean wash upon these coasts, in abundance, trees which the avalanches of snow have during the spring uprooted in milder countries and swept into the sea. Moreover, the terrible *white bear*, which roams in these latitudes, furnishes a fur which affords an invaluable protection against the cold. In the month of May the sun reappears



White Bear.

above the horizon, and as the cold abates the inhabitants issue from their snow huts to profit by the abundant resources afforded them in the fishery and chase.

Legions of *geese*, *ducks*, and *plover* alight every summer upon the shores of these frozen regions, and together with the *eider duck*, which furnishes the precious *eider down*, rendered so profitable by our luxury, become to the inhabitants of many of these countries the object of a very lucrative pursuit.

But the sea itself is extraordinarily productive. From the remotest depths of the frozen sea issue those immense legions or

shoals of herring, which, after being diffused like a veritable manna along the coasts of Europe and America, return to the icy poles to repair the losses which they have experienced, and recruit their forces for the following year.

But the animal which a kind Providence seems to have created expressly to constitute the wealth and indispensable resource of the Esquimaux population dispersed on these desolate shores is the *seal*, or *sea calf*. The seal is a *mammal* of about three or four feet



Seal.

in length, every part of which is useful to the Esquimaux. The flesh serves to nourish them, the fur and skin to clothe them, or cover their huts and canoes, and the fat to feed the lamps which give them light, warm their dwellings, and cook their food, or, converted into oil and sold to the European merchants, procures

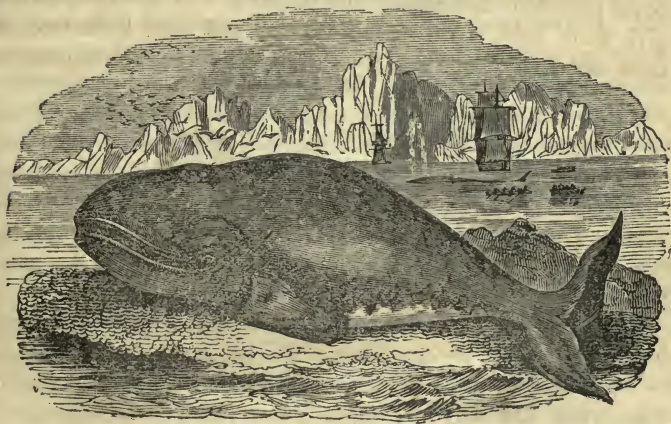


Walrus.

them money for buying the different commodities which they require. The *sea lion* is a more rare species of seal, about 15 feet in length. The *morses*, or walrus, even larger yet, have a head of revolting ugliness ; their upper jaw is provided with two long, hanging tusks, with which they cling to the ice or strike their enemies. They are about 20 feet in length. Their tusks yield a hard and white substance, called *ivory*, which may be polished and carved with much more facility than bone, and of which valuable statues and ornaments of every description are manufactured. The best ivory, however, is that furnished by the elephant, a large animal of which we shall speak hereafter.

Finally, among the *ceta'cea* (the largest of the *mammals*) should be mentioned the *whale*, so much sought on account of its abundant fat, from which is extracted an oil very useful in the arts, and for the sake of its whalebone, which serves for a multitude of uses, among others, to form the frames of umbrellas and parasols.

Unfortunately the whales will have soon almost entirely disappeared from the frozen sea, owing to the assiduous pursuit which has been made for them within three centuries. This enormous animal, the largest of all that exist, is from 60 to 120 feet in length, and from 20 to 30 in thickness.



Whale.

Another remarkable cetaceous animal, which inhabits this Northern Sea, is the *narwhal*, from 18 to 20 feet in length, whose head is armed with a long, horizontal tusk, very hard and pointed,



Narwhal.

with which this animal transfixes its enemies, and even the whale. These tusks, which sometimes attain even 10 feet in length, furnish a valuable ivory. Each animal has two of these defences; but it seems that only one of them ever attains its perfect development.

SECT. 2. THE SOUTHERN OCEAN. — The Southern Ocean is even colder and more obstructed by ice than the preceding. The summer, in these regions, commences towards the middle of November; but the heat, still feeble, produces scarcely any apparent effect upon the ice, accumulated during nine months of severe cold. In December the snow melts in the sun, and bodies of ice, becoming detached from the shores, are precipitated with a tremendous crash into the sea. In January the heat becomes very powerful, and the sea *smokes*, (as sailors say,) that is, forms vapors dangerous to navigators. Towards the end of the same month snow descends in furious whirlwinds. Fields of ice form on all sides, birds and seals depart in search of a milder climate, and until the following summer a deathlike silence reigns, only interrupted from time to time by the roaring of the tempest.

God does not seem to have designed that such gloomy regions should become the abode of man. He has created there only a few small islands, scarcely known, and which would be absolutely unimportant had they not, within a few years, been frequented

by certain whalers and seal hunters, who failed to derive sufficient profit from the Northern Frozen Sea. All these lands present a spectacle of frightful desolation. Mosses can scarcely grow there, and in the least severe regions a few miserable dwarf trees. Man has never dreamed of establishing himself among them, and they have been abandoned to the seals and birds, such as penguins, mauchots, petrels, and other sea birds, which, during the short summer months, occupy these deserted shores, and devote themselves to the cares which the preservation of their race demands.

SECT. 3. THE ATLANTIC OCEAN. — The Atlantic Ocean lies west of Europe and Africa, between the old and new world. It is separated by no very precise limits from the two Frozen Seas. Navigation on this sea, which is very much frequented, is facilitated by the action of winds and regular currents, with which it is important to be well acquainted; for instance the *trade wind*, which, north and south of the equator, blows with force from east to west, and the *great equatorial current*, which, like an immense river of running water, flows from the coasts of Africa even to those of the new world; it there makes the circuit of the vast basin of water formed by the sea, and known by the name of the Gulf of Mexico, issues thence like a great stream of warm water, with extraordinary force and rapidity, and returns to the coasts of Europe and Africa, after being broken into many smaller currents.

It was this current, generally known by the name of the *Gulf Stream*, which washed upon the coasts of the Azores Islands, in the centre of the Atlantic Ocean, the body of an American of a copper-colored skin, and various fragments of canoes; thus affording Christopher Columbus a final proof that by pursuing a westerly course he should discover new lands.

No ocean has such powerful *tides* as the Atlantic, especially at the north of America and at the west of Europe.

The Atlantic Ocean nourishes in its depths many marine plants. On almost all the coasts are found *varec* or *fucus*, lengthy plants which the tempests tear up from the bed of the ocean where they have grown, and cast upon the shores. They are

used to enrich the soil, and from them is obtained iodine, a substance which is useful in many diseases ; they are also burned, and soda is made of the ashes, which is employed in the manu-

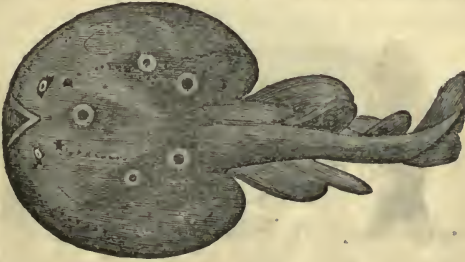


Fuci.

facture of soap. Other plants of this species furnish, when dried, a coarse but strong thread. There are some kinds which may be eaten, and from which sugar may be extracted. The fucus sometimes forms vast fields on the surface of the sea, which retard the progress of vessels. One region is cited in the Atlantic Ocean, south of the Azores', in which these plants form immense banks, which are inhabited by myriads of marine animals, and which, always verdant, are transported hither and thither by the warm breezes that blow in these latitudes.

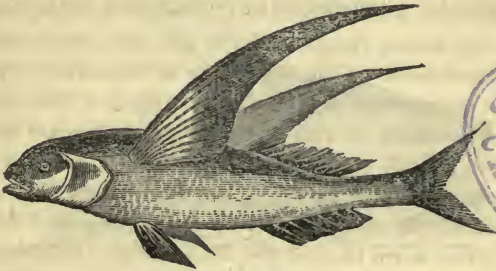
Fishes are extremely numerous in this sea, especially in the warm regions, where their colors are much more beautiful and diversified. We shall mention only those best known : *Herrings*, *sardines*, and *anchovies*, which are of the same species. The *cod*, in the fishery of which nearly 3000 American and European vessels are annually employed. The *sword fish*, remarkable for the long point in the form of a sword which terminates its upper jaw, and affords it a formidable offensive weapon. The *salmon*, which supplies the inhabitants of Northern Europe and America with an important article of food ; in Norway, the fishermen take 2000 of them in a day ; in a river of England, a draught of 3500 may be procured by a single cast of the net. They ascend the rivers in order to deposit their eggs,

28,000 of which have been counted in a single female. The *torpedoes*, celebrated for the electric discharges which they emit



Torpedo.

at the touch. The *flying fish*, which, in the warm regions, leaps out of the sea, in order to escape the attacks of its enemies. The



Flying Fish.

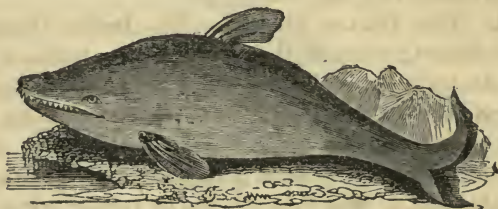
flying exocætus, which has the faculty of elevating itself a considerable distance above the surface of the water, by means of its fins, which have a strong resemblance to wings. Of all the inhabitants of the sea, this is the most pursued and tormented; if it attempts to escape its maritime enemies by flying in the air, it becomes the booty of frigates and other birds of prey; or if it fall upon a ship's deck, the passengers or sailors hasten to kill it for the sake of its flesh, which is fat and of an excellent flavor. The *shark*, the most voracious of fish, which is sometimes 25 feet in length, and has exceedingly sharp teeth, follows ships in order to devour immediately the dead bodies which are cast into the

sea, or the living who chance to fall into it. The *hammer head*, which is 12 feet in length, is also very ravenous, and has a singular head, in the shape of a hammer.



Shark.

Among the mammals may be named the *dolphins*, the largest of which are 15 feet in length, and the *porpoises*, 5 feet. *Whales* and *cachalots* have almost entirely disappeared from this sea.



Dolphin.

On the coasts of Europe and America, very rare *oysters* are procured, and likewise *lobsters*, the great crayfish of the sea. The *tortoise* is the reptile most sought in the Atlantic Ocean : in the warm regions, the tortoises are as many as 6 or 7 feet in length, and weigh as much as 8 quintals ; their flesh is wholesome and juicy ; of their shell snuff boxes and combs are made ; there is but one species which yields the shell ; this is the *imbricated tortoise* ; it is more rare than all the rest, and is only found at 10 degrees north and south of the equator. The shell is so much in request that they are raised in parks ; the females deposit their eggs by hundreds in the sand, leaving them to be hatched by the sun :

these are sought by sailors as an agreeable dish. They usually lay from 120 to 160 eggs. Many sea birds are very fond of them, and destroy the greater portion.



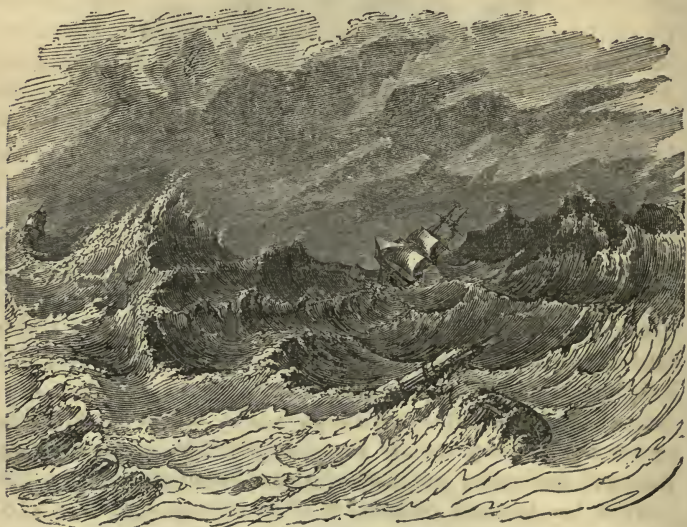
Tortoise.

The Atlantic Ocean does not lack sea birds. In the cold regions are *ducks*, *plungeon*, and *petrels*, *sea swallows*, *frigates*, which follow vessels for long distances; and finally the *albatross*, whose wings extended measure a length of 9 feet, and which fearlessly wanders more than 500 leagues from the coasts; this is the great enemy of flying fish.

SECT. 4. THE INDIAN OCEAN.—The Indian Ocean, situated in the hottest portion of the globe, extends between Africa, Asia, and Australia; it is also called the *Sea of the Indies*, which name it has received on account of its vicinity to India, a very celebrated country situated south of Asia, and of which we shall soon have occasion to speak more particularly. Navigation is by turns impeded and facilitated on this sea by regular winds, called *monsoons*, which blow during six months in one direction, and six alternate months in a contrary direction. This change is in conformity with the seasons. From spring to autumn, the monsoon blows from the south-west to the north-east; from October to March, from the north-east to the south-west. Thus a ship sailing from Europe for the coasts of India or China would be favored in its progress by the monsoon, if it arrived on the eastern coast of Africa in the spring or in the commencement of summer, and would be retarded by it in the other case.

This sea, like the Atlantic Ocean, is subject to violent *hurricanes*, which cause terrible havoc on the coast, and founder many ships. A little black cloud appears in the sky, which rapidly increases in the midst of thunder and lightning, and soon over-

casts all the azure portion of the firmament; the bewildered birds fly in every direction, and make the air resound with their piercing cries; the whole sky is enveloped in the most profound obscurity. Suddenly the hurricane breaks loose, the dreadful



Hurricane at Sea.

hissings of a fearful whirlwind are heard, trees are uprooted, houses torn from their foundations, and the boats on shore dashed in pieces; enormous waves, uprearing, cover the coast with wrecks and stones, and afterwards, retreating, sweep the pebbles from the shore with a harsh and frightful report, while innumerable flakes of white foam, borne by the wind into the interior of the land resemble snow issuing from the sea.

The principal wealth of the Indian Ocean formerly consisted in the *pearl oysters*, which were found in greatest abundance at the entrance of the Persian Gulf, at the north-west, and in the strait which separates India from the Isle of Ceylon. They somewhat resemble the common oyster, but are larger. They are found attached to ledges of rock, from 15 to 75 feet in depth. A fisherman dives to the bottom, remains a minute and a half

under water, gathers as many shells as he can, sometimes as many as 150, and then hastily gives his companions the customary signal for drawing the cord, by means of which they bring him as rapidly as possible above water. After a few days they open and carefully wash the oysters, and commence the search for the pearls enclosed in them. All the oysters do not contain them; but sometimes ten or twelve are found in a single shell. The pearl is composed of a substance which the animal secretes or emits from its body when it has been wounded, or a grain of sand enters its shell. The pearls are round, or slightly elongated; the most highly prized in Europe are white, slightly tinted with blue; those of Ceylon are rose color. Some of them are yellow, and are very much esteemed by the Orientals; but the rarest and most costly are black: some have been met with as large as cherries. Pearls were a great article of luxury with the ancients, and are now a favorite ornament among the women of the East. The two pearls which served for the eardrops of Cleopatra, a celebrated Queen of Egypt, cost more than \$600,000 of our money; now, the largest pearl within our knowledge is that which is used by the Queen of Spain for a cap button. They are often replaced in Europe by false pearls, of perfect imitation.

These oysters also furnish another very precious substance, which is the brilliant *mother of pearl*, that garnishes the interior of the shell, and of which sleeve buttons, knife handles, very beautiful snuff boxes, &c., are manufactured by removing with sharp tools the outer surface of the shell, which is not mother of pearl.

Another mollusk, which also gives rise to a very considerable fishery, is the *holothuria*, a species of worm, of which a paste is made, regarded as a dainty by the Chinese. A great number of vessels are engaged in this fishery, which is carried on especially on the northern coasts of Australia, and in the neighboring islands.

Another product of the Indian Sea, which is in no less demand among the Chinese gourmands, is the nests of a very small species of swallow, called *salangane*; these nests, transparent as gum, and very fragile, appear to be formed of gelatinous marine plants. They are collected on the ledges of rocks, bordering on

the sea, in the islands situated in the north of Australia, and particularly in Java. The Chinese make great consumption of them, and they are also exported to Europe.

The *tortoises*, of which we have already spoken, give rise to quite an important fishery in the small islands situated on the eastern coast of Africa. They furnish a famous shell.

This ocean contains a great number of excellent *fish*, which, however, present nothing remarkable. Among the cetacea, we should, however, mention the *dugong*, whose head, like that of the moose, is armed with two strong vertical teeth, concealed under a thick lip. The flesh of the dugong affords a very excellent aliment, but it is sought chiefly for its tusks, which answer the same purposes as ivory. This seal inhabits shallow coasts, and subsists on marine plants.

SECT. 5. THE PACIFIC OCEAN.—This ocean, discovered by the Spaniard Balboa, in 1513, at the period of the conquest of America, received from him the appellation of the *South Sea*, by which it is now often designated. Some years after, (1520,) the navigator Magellan, who first made the circuit of the world, having traversed this whole sea from east to west without experiencing any tempest, gave it the name of *Pacific Ocean*, which it has also preserved.

This ocean, the most vast of all, possesses a large number of currents, with which it is important for navigators to be acquainted. Among others should be named the immense *equatorial current*, which moves towards the west with remarkable regularity, and enables voyagers sailing from America to China to accomplish this passage almost without hazard.

Nowhere do *sea weeds* acquire such gigantic dimensions as in this ocean. The stalk of the *nereocystis*, which is about the size of whip cord, extends all along the north-western coasts of America, to a depth of 300 feet; it terminates in a balloon of from 6 to 7 feet in length, in the form of a barrel, and crowned by a tuft of more than 50 forked leaves, the tuft itself being from 30 to 40 feet in length. The balloon, which is filled with air, serves to support this enormous tuft, and enables it to float on the surface of the water. Above the balloon, in the midst of the leafy tuft, the sea otter finds its favorite retreat; concealed in this am-

buscade, it waylays the fish which it makes its prey. There must necessarily be great strength in this long and slender stalk, which sustains all this ground tackle, and is employed as a fishing line by the inhabitants of the coast. Another plant of the same species, the *macrocystis*, whose balloon and leaves are of smaller dimensions, sometimes attains a length of 1500 feet; as it approaches the surface of the water, the stalk divides into two branches, and these into numerous others, finally resulting in a floating mass of foliage, occupying a space of some thousand square feet. This is the longest of all sea weeds.

Among the interesting animals which the Pacific Ocean presents, is the *madrepores*, which, although of infinitely small size, produce enormous banks of coral, and even islands of greater or less extent. Like the larvæ of bees, (or *convains*,) which may be seen in a cake of wax, placed each in a cell, the head turned towards the opening, the little madrepores are also fixed in strong tenements, which they have themselves created, in the same manner as snails secrete or emit from their body a substance, which, hardening, forms their shell. These animals cannot leave their cell, but their mouth opens towards the aperture, and takes its nourishment from the waters of the sea by means of tentacles, which answer the purpose of arms. Each of these tiny beings labors during its short existence in enlarging its dwelling. Their eggs soon hatch, and the young madrepores erect their cells above those which existed before them; these in their turn are stifled and disappear, but their habitations of stone serve as foundations for those of new generations. It is estimated that a reef of coral increases only half a foot in one century: nevertheless, in the course of time these enormous masses of rock rise even to the surface of the water, and cease to grow; but sand and various deposits are soon accumulated upon them by the waves, and thus islands are formed almost level with the water, which the subterranean fires of volcanoes sometimes upheave, and seeds of plants, borne thither by the winds or birds, soon engender a more or less abundant vegetation, until, finally, man fixes his abode there.

As the madrepores cannot live at a very great depth, the coral reefs have only been established upon the elevated portions of

the ocean bed. But there these animals are collected in masses as innumerable as the blades of grass which cover our meadows.

Hundreds of leagues in length are occupied by these prairies of madrepores, which form, for example, on the eastern coast of Australia, a dangerous reef of 500 miles in length, without any opening for the passage of ships.

The coral, properly so called, which is found especially on the



Coral.

coasts of a sea in Europe entitled the Mediterranean, and upon those of the Indian Sea, is also formed by animals analogous to the madrepores. It resembles in shape a tree, having only the trunk and branches; but it does not rise more than a foot and a half above the rocks, to which it is attached by a broad-spreading base. The coral is found from 15 to 300 feet in depth; the most beautiful is red or flesh color, as hard as stone, and is employed in the manufacture of necklaces, ear rings, bracelets, &c., very highly prized, especially in Asia, Africa, and America.

Among the mammals which should be cited, on account of the pursuit to which they give rise in this ocean among Europeans and Americans, is the *cachalot*, which resembles the whale, but has not as heavy or thick a body; it swims with more rapidity, and can remain longer under water. It also yields less oil, has teeth, and no whalebone; but, on the other hand, there is found in the cavities of its head a peculiar liquid, which, on cooling, hardens and becomes the *spermaceti* of which candles are made, and which is also used in medicine.

The cachalot is sought principally for this substance, as it contains much less blubber than the whale. The perfume known by the name of *ambergris* is also a substance which is formed in the entrails of the cachalot. This animal has an enormous head, which constitutes nearly half its body ; thus it can swallow huge sharks at a mouthful. A skeleton of a cachalot has been seen, in the head of which twelve musicians were playing around a table, while thirty persons, seated at another table, were taking their repast in the skeleton of its body.

An assiduous chase has also been prosecuted for the *sea wolf*, a mammal from 25 to 30 feet in length, covered with an excellent fat, comparable to butter, and whose skin may be prepared to serve different purposes. Finally, the seal known by the name of the *sea lion*, is pursued even to the coldest extremities of the great ocean ; its skin is employed in the manufacture of leather straps and shoes.

CHAPTER VI.

THE CONTINENT OF ASIA.

ASIA is the largest of the five divisions of the world. Its extent is five times as great as that of Europe or Oceanica. It is, moreover, situated in the midst of all the other continents, with which it is easily put in communication, both by means of the main land and by groups of islands lying adjacent to each other.

SECTION 1. THE LIMITS OF ASIA. — The *Arctic Ocean* is on the north, with which we have already had occasion to become acquainted ; and on the east the *Pacific Ocean*, with which we are also familiar, but which forms on the coast of Asia different seas, gulfs, or straits, which merit our particular attention.

Between the most prominent point of Asia, called *East Cape*, and the continent of America, is *Behring's Strait*, so called from the name of a Danish navigator in the service of Russia, who first discovered it. The passage is there obstructed during a great part of the year by ice.

South of this strait, between the Asiatic continent, the American continent, and a long chain of islands called Aleutian Isles, is the *Sea of Kamtchatka*, where the whales now seek refuge from the incessant pursuit which is made for them, and before which they will soon completely disappear. It has been remarked that since they have been constrained to take up their quarters in these rigorous climates these cetacea have become less productive. The females give birth to only one during the year, and moreover, the young, being unable, as heretofore, to migrate to a more southern sea, grow but slowly, and often perish prematurely of a disease of the lungs, of which naturalists have proved the existence.

South-west of the preceding is the *Sea of Okotsk*, between

the continent of Asia and some islands called Kooriles. This is a sea which generally affords a safe navigation, because it contains few sand banks and shoals. But after the month of November its shores are covered with ice, which does not melt until April. The *Sea of Japan*, on the contrary, situated between the coast of Asia and the islands of Japan, and which somewhat resembles a pear in shape, is a gloomy, foggy, and stormy sea, which renders the harbors of this country difficult of approach.

Nature thus seems to lend her aid to the law which prohibits the entrance of the empire of Japan to all strangers except the Chinese and the Dutch, who only enjoy this privilege on conditions almost intolerable. The Americans have, however, succeeded in establishing some relations with this country, which will doubtless acquire greater importance.

South-west of Japan and of the peninsula of Corea, is a sea known under the name of the *Blue Sea*, although possessing no especial claim to this title. Advancing northerly into the land, it forms a gulf, which has received the name of the *Yellow Sea*, on account of the yellowish deposits of lime with which certain great rivers of China cover the surrounding banks.

Farther south we encounter the *Indian Ocean*, at which we have already glanced in a general manner, but will now examine more in detail.

It first forms, between the islands called Philippine and the continent, a vast sea, known by the name of the *China Sea*. A very curious mollusk is there obtained, the *cuttle fish*, whose body, like a sack, is surmounted by two eyes and eight long claws, with which it forcibly seizes little marine animals, and conveys them to its mouth, which is provided with a kind of beak. Great consumption is made of the flesh of this animal; the bony part, moreover, is sold under the name of *cuttle fish*, to be placed in the cages of canary birds, whose bills it serves to cleanse. But the most curious property of the cuttle fish is a bladder filled with a black liquid, which the animal has the faculty of diffusing around it, to darken the water, and thus elude the pursuits of its enemies. The famous *Chinese ink*, which no one has yet succeeded in imitating, is said to be made of this liquid. Another species of cuttle fish, quite common in the Mediterranean, fur-

nishes designers with the brown color called *sepia*. The China Seas and the Philippine Isles also furnish the most valuable species of imbricated tortoise, which yields a very beautiful shell.



Cuttle Fish.

The sea of China, projecting into the land, forms at the west and south two considerable gulfs, that of *Tonquin* and that of *Siam*. Both, but especially the former, are exposed to terrible hurricanes, known under the name of *typhoons*. They announce their approach by a small black cloud; then follow terrific thunder and lightning, a pouring rain, and violent wind. After five or six hours an absolute calm succeeds; but the hurricane soon recommences in an opposite direction with redoubled fury, and continues for an equal length of time. It is the conflict between the north wind, descending from the mountains of the continent, and the south wind, proceeding from the sea, which produces these whirlwinds, by which trees are uprooted like straw, and many great ships submerged.

The Indian Ocean forms, on the eastern coast of India, a vast sea, known by the name of the *Bay of Bengal*; it is at the entrance of this gulf, between the Island of Ceylon and the continent, that the finest *pearls* are found.

On the other side of the peninsula of India is situated the *Sea of Oman*, so called from the name of the southern coast of

Arabia. It forms two vast gulfs, infinitely more celebrated than itself. The first is the *Persian Gulf*, whose bed is carpeted with greenish coral, insomuch that in calm weather one seems to see extended beneath the water verdant forests and fresh prairies, which spectacle contrasts agreeably with the gloomy monotony of a sandy and arid shore. This coral is, however, inferior to that of the Mediterranean. One other curious characteristic of this gulf is, that in many places springs of fresh water bubble up in the midst of the briny waves. The other is the *Sea of Arabia*, or *Red Sea*, replete with reefs, shoals, and islets, and presenting but little safe and open space to navigation. This sea owes its name to a red tint which it sometimes assumes during one or two days, and which proceeds from a compact but thin bed of a fine substance, which, examined with the microscope, has been discovered to be an infinitely small plant. Elsewhere similar phenomena have been produced by the presence of red microscopic animalcula.

North-west of the Red Sea is a strip of land sixty miles in breadth, and known by the name of the *Isthmus of Suez*, which connects Asia with Africa. It is proposed to establish across this isthmus a railroad, which would considerably facilitate the commerce of Europe with the countries of India and China. If, better yet, it should be decided to canalize it, navigators sailing for Southern Asia would no longer be obliged to make the circuit of Africa, which sometimes involves such a long and difficult voyage.

On the western side Asia is washed by seas formed by the Atlantic Ocean. We first meet with the *Mediterranean Sea*, of whose beautiful coral, cuttle fish, &c., we have already made mention, and of which we shall speak more particularly hereafter. Next comes the *Archipelago*, sprinkled with its charming and innumerable islands, and where are found the finest and softest sponges.

The sponges are produced by an animal plant, or zoöphyte. They spread over the rocks, to which they adhere so tenaciously that it is impossible to tear them away undamaged. But at certain seasons of the year clusters of eggs become detached from them, which, transported hither and thither by the waves, go to

form elsewhere other sponges, carpeting with them the bottom of the seas. From the Archipelago we pass to the *Sea of Mar-*



Sponges.

mora, so called on account of the great quarries of white marble which are found in the principal of its islands, (*marmor*, marble.) This is a large, calm basin, which the wind scarcely ruffles, whose banks are bordered with pleasant country seats, and its waters covered with boats whose form and lightness are sufficient to indicate the tranquillity of the waves which they furrow. The *Black Sea*, which we next encounter, is, on the contrary, a terrible sea, and fruitful in shipwrecks. In ancient times it was called by a name which signified *inhospitable sea*, and the sailors of modern times stand no less in awe of its sudden tempests. The number of vessels which annually perish there is very considerable. Ice also obstructs its navigation in the severe winters. Some years of extreme cold have been cited, when this entire sea has been frozen over.

From the Black Sea to the Frozen Ocean of the north, the boundary lines which separate Asia from Europe are not very clearly defined. The Ural River and the Ural Mountains, which extend from south to north, from the Caspian Sea to the Frozen Ocean, are, however, universally considered to determine the limit. The *Ural River* flows first among steep rocks, but lower down

its waters wind through vast steppes or arid plains covered with efflorescences or deposits of salt. At the approach of winter it becomes very fruitful in fish, and empties into the Caspian Sea by many mouths.

The *Ural Mountains* form a chain which is not very elevated, and which is only remarkable for the marvellous wealth of its mines. *Iron* is found there in abundance; in certain places the deposits seem to be inexhaustible. On the eastern declivity of the chain are soils, where, by merely raising the turf, there may be found, at a slight depth, *argil*, or sand containing gold. A certain quantity of *diamonds* are also collected from these sands. A rare species of metal, the *platina*, white as silver, and harder and heavier than gold, is also found here. In Russia it is used for money, and it serves a great number of purposes in the arts.

SECT. 2. PENINSULAS OF ASIA. — On looking carefully at the map which represents the form of the Asiatic continent, you will remark certain portions of land, which project into the sea, and are surrounded on many sides by water; these are called *peninsulas*. We shall name only the principal, which are six in number, commencing at the west, and continuing with those which lie at the south and east.

Asia possesses on its western side two immense and very important peninsulas, but of which we shall say nothing at present, as they both form distinct continents, which will claim our especial attention hereafter. We refer to *Europe* and *Africa*, which, as you will perceive, are, in truth, peninsulas dependent on Asia. There remains for us to describe only one peninsula at the west of Asia, viz., *Antolia*, or *Asia Minor*, which is encompassed on three sides by the Black Sea, the Sea of Marmora, the Archipelago, and the Mediterranean, of which we have previously spoken.

1. ANATOLIA. — It would be difficult to give an exact description of the aspect of this immense country, so widely does it vary in different localities. In the interior are found vast elevated plains, to which the almost complete absence of trees imparts a peculiar air of sadness; but in the mountains or in the low plains, of which there are a great number near the coasts, one remarks the flourishing appearance of the vegetation of the southern country.

The climate is much warmer than ours, but it is neither too dry nor too scorching.

Anatolia presents nothing remarkable in respect to its precious metals or minerals ; we should, however, mention the *sea foam*, or *meerschäum*, a species of argillaceous earth, of which the beautiful heads of pipes are made, to which the Turks are so partial, and which are highly esteemed in every country where smoking is practised.

The vegetables of Asia Minor are in the main those of the countries of Southern Europe — the orange, the olive, the fig, the pomegranate, the mulberry for silk worms, the vine, &c. Raisins are almost as important an article of commerce in Asia as wine in Europe. Olive oil is used instead of butter in the preparation of food. But this country also yields other products, which are peculiar to it, as the pistachio tree, which bears a species of almond called *pistachio*, often found in comfits. A plant known by the name of *sesame* furnishes an excellent oil, considerable quantities of which are transported into Europe. Next comes that very useful shrub, the *cotton tree*. Finally, in Anatolia the white poppy is cultivated to a great extent, from which is extracted *opium*, a substance which, administered in small doses, induces sleep, and which taken in large quantities intoxicates, and even causes death. In that country it is only employed as a medicine, and with great precaution ; but the Turks, and especially the Chinese, make use of it both in drinking and smoking, mixing it with their tobacco in order to produce a short-lived intoxication, which practice, in the course of time, stupefies and destroys them. Opium is at first an oily juice, which is procured by making an incision around the heads of poppies ; this juice hardens, and is afterwards moulded in the form of cakes.

The animals of Asia Minor are for the most part the same as those of the countries of Southern Europe — fine horses, mules, and a very vigorous and superior race of asses. The *hyena* and the *jackal* disturb the silence of the night by their horrible cries. Hyenas are fierce, strong, and voracious animals, of the size of a mastiff, which go forth at night in search of prey, and even disinter dead bodies ; they, however, flee from man, whom they only attack when greatly exasperated or in a famished condition. The

jackals, which greatly resemble foxes, are animals that live in companies, and sally forth by night in large bodies to seek



Hyena.

their prey, and carry off game and sheep. Their barking and howling give one no rest during the night; by day, on the contrary, the jackals are quiet, and flee at the sight of man. Asia



Jackal.

Minor is the country of the goats, cats, and rabbits known under the surname of *Angora*, which are so remarkable for their long, silky hair. Only the cats and rabbits can undergo transportation and exist in other countries, the goats being unable to endure the change of climate. Of the wool of the latter very beautiful cloth is manufactured, and shawls almost as much esteemed as the celebrated shawls of Cashmere.

The white population is composed of Turks, a sober, hospitable, proud, and valiant race, but who have always shown

themselves extremely cruel and contemptuous towards their Christian subjects. The latter are either Armenians, who chiefly in-



Turkish Horseman.

habit the towns and devote themselves to commerce, or Greeks, active and industrious agriculturists, but knavish and deceitful, as slaves long subject to oppression usually become.

The three southern peninsulas of Asia are the following:—

2. ARABIA. — *Arabia* is surrounded by the waters of the Persian Gulf, of the Sea of Oman, and the Red Sea, with which we are already familiar.

To form an idea of the aspect of this country, picture to yourself vast arid and deserted plains, scorched by a burning sun, and only studded here and there with fertile spots, called *oases*; barren and rugged mountains; not a lake or rivulet; a few inconsiderable rivers, and these mostly dry during a portion of the year; and only on the sides of the mountains, especially in the southern part, fresh and fertile valleys, which agreeably refresh the eyes.

The climate is generally dry and burning; on the coasts it is

often heavy and damp. Two seasons only occur there — the dry and the rainy. After the latter, the deserted plains are clothed with a smiling verdure, and carpeted with flowers; but ere long the heat of the sun has again withered the grass, and reduced the desert to its wonted aridity. Sometimes the dry season lasts two or three years, during which not a drop of rain falls, and the whole country is struck with sterility. Often, also, the traveller is surprised by terrible winds, the most celebrated of which, the *Simoom*, is a hurricane, coming from the south, which, raising whirlwinds of red and burning sand, threatens to suffocate and swallow up men and animals.

Arabia furnishes no extraordinary minerals or precious metals.

Vegetation is very luxuriant in the well-watered portions, principally at the south-west, in what was formerly called *Arabia Felix*.

There are found wheat, maize, olives, and other plants, producing what we call southern fruit — oranges, figs, &c. Arabia possesses, moreover, many other celebrated vegetables, as the *date tree*, whose fruit, of a yellowish brown, of the size of a prune, and containing a very hard kernel, affords a wholesome and agreeable



Date Tree.

food, which partly takes the place of bread in this country. The date is a tree of the family of palms, whose trunk, forming an almost straight column of equal size throughout its whole length,

often rises to more than 100 feet. The dates grow in enormous hanging clusters, which often weigh from 25 to 30 pounds, and issue from the midst of the crown of leaves or palms at the top of the tree. Another renowned plant, of which this has long been considered the primitive country, is the *coffee tree* — an evergreen



Coffee Tree.

shrub, which usually grows to a height of 12 or 15 feet, and whose flowers, similar to those of the jasmine, diffuse an agreeable perfume. When they fall, the fruit succeeds them, which is first green, then red, and when ripe, similar to a cherry. Two grains, enveloped in a thin peel, are found in the pod: these, after being burned and ground, yield us the beverage. No species of coffee can be compared with that of *Mocha*, in Arabia. This peninsula also produces various trees which furnish gums and resins. Thus from the bark of a species of *acacia* exudes the celebrated *gum arabic*, so much employed in the arts and in medicine, and particularly in the composition of jujube paste, mallows, and licorice. Other trees yield *balsam*, one of which is called the *balm of Mecca*, which is the most odoriferous and the most costly of resin gums. Others furnish *myrrh* and *olibanum*, or *incense*, which the ancients were in the habit of burning in their temples, to purify or perfume them.

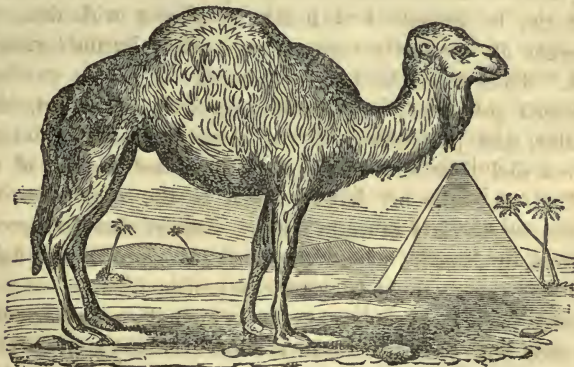
Arabia is no less remarkable for its animals. No horse can be compared with the *Arabian* in beauty, fleetness, and attachment to its master. The *camel* is also found here, an animal noted for

its sobriety and docility, which the Creator seems to have organized expressly for traversing the desert solitudes of Asia and



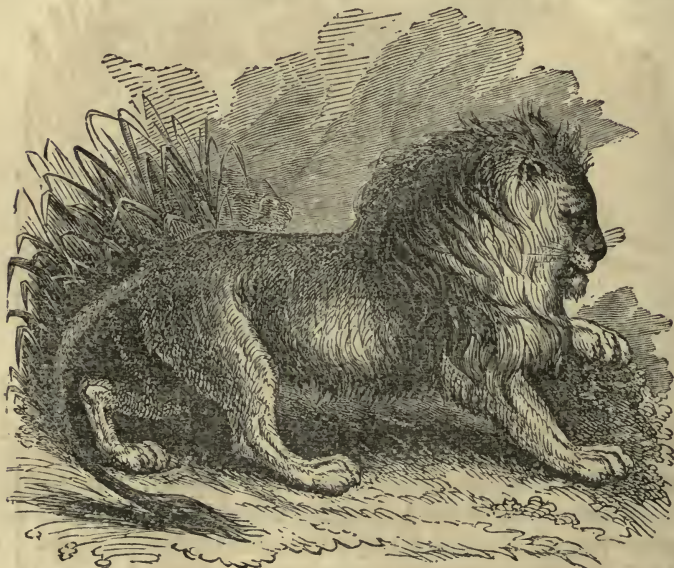
Camel.

Africa, for existing many days during the heat of summer without water, and bearing a burden of 6 or 8 quintals. The ordinary camel has two humps; but there is a species, peculiar to Arabia, which has but one, and is only used for the saddle and the race: this is the *dromedary*; it runs very fast, and has an easy pace. *Asses* are also raised in this country of a species so excellent and



Dromedary.

spirited that they may be compared to horses. The immense solitudes of the interior resound throughout the night with the horrible roar of the *lion*, the fearful cries of the *panther*, and the



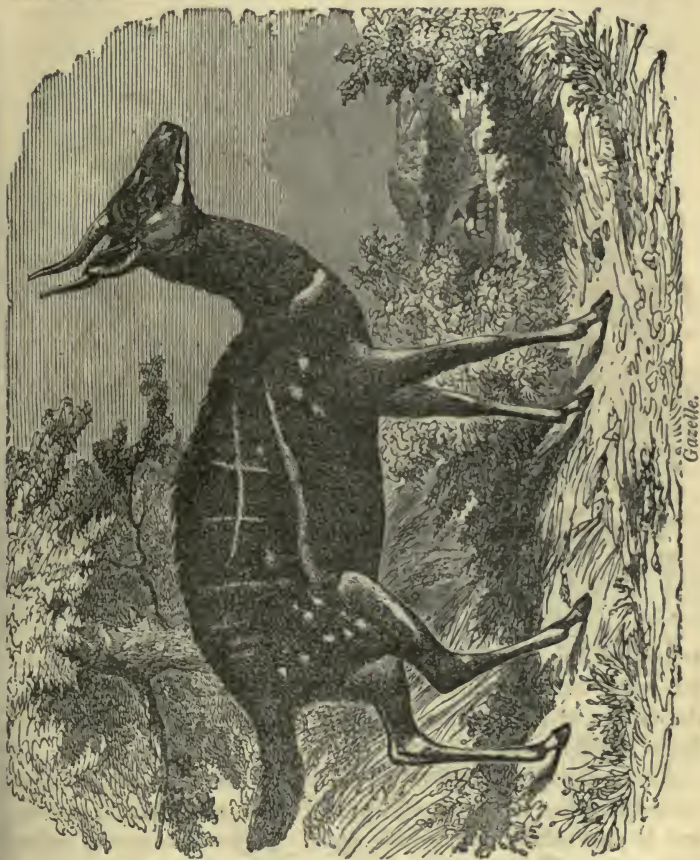
Lion.

yelping of the *jackal*, all of which unite in waging desperate war with the graceful and gentle *gazelle*, or with the *ostrich*, the largest of birds, whose eggs are hatched by the heat of the desert sands in which they are deposited.

Among the reptiles should be mentioned the *chameleon*, a lizard more than a foot in length, which lives on trees, subsists on insects, and is particularly remarkable for its sudden changes of color. Ordinarily it is green, yellowish when asleep, black when exasperated, and at other times presents still different shades.

Among the insects, none are more formidable than the locusts, which move in columns so dense that their flight obscures the light of day, and the hollow report which it creates announces their approach at many leagues' distance. They extend their ravages throughout Southern Asia and the north of Africa.

Wherever they appear, the verdure disappears; the grass is entirely consumed; the trees, stripped of leaves, are reduced to



Gazelle.

their branches and trunks; and often famine ensues. The Arabs collect these locusts, string them together in order to dry them, and eat them roasted.

The population of this peninsula is white, but slightly bronzed by the heat of the sun. The Arabs are lean, grave, and proud; very sober and hospitable, but implacable in their vengeance, and

merciless pillagers of the neighboring nations, or of travellers who venture into their deserts without sufficient escort. The greater part are nomadics, that is to say, without fixed abodes, transport-



Ostrich.

ing their cattle and tents from place to place. They are divided, as in the times of the patriarchs, into numerous and often hostile tribes, and the Arabic people always exemplify the prophecy foretold concerning their ancestor — “Ishmael will be a wild man;

*Locust.*

his hand will be against every man, and every man's hand against him." (Gen. xvi. 12.)

The Arabs are all disciples of the false prophet Mahomet, who was born at Mecca, and whose tomb is located in Medina—the two holy cities whither every good Mussulman considers it his duty to perform a pilgrimage, at least once in his life.

*Pilgrimage to Mecca.*

3. INDIA. — The third of the great peninsulas of Asia is *India*, one of the most curious and most celebrated countries in the world. It is situated between the Gulf of Oman and

the Bay of Bengal, and terminates in Cape Comorin. This is a country whose aspect is extremely varied: here are charming valleys, or magnificent plains of extraordinary fertility; there, barren deserts of sand or steppes; elsewhere, immense marshes near the mouths of its great rivers, and vast and almost impenetrable forests.

The *climate* is extremely hot, at least in the plains: only two seasons are known there — the *rainy season*, during which all the low valleys are inundated, and the *hot season*, when the heat is often so intense as to render the Europeans incapable of the slightest labor so long as the sun remains above the horizon. The air is generally salubrious; nevertheless, it was in India that the terrible disease known by the name of *cholera* originated.

India has always been greatly renowned for its minerals — its gold and its precious stones; among which should be specified the magnificent *diamonds*, which are found in the beds of sand at the foot of the mountains, and which are sold at very high prices. That displayed by the Queen of England, at the great exhibition in London, the *Koohinoor*, is said to be worth 4,000,000 of dollars.

The vegetation, favored by a warm climate and a damp soil, exhibits uncommon vigor. Every where may be found plants presenting useful stalks or roots, delicious fruits, gorgeous flowers, rich colors, or precious perfumes. Among the woods we should distinguish the *bamboos*, a species of reeds which grow to the height of 60 feet, and whose very hard stalk is used for building houses: as it is hollow inside from one knot to the other, it is employed in the manufacture of vessels for carrying water; the smallest, used as walking canes, are in great demand in this country, on account of their lightness and flexibility. Among the plants serving for food should be named the *rice*, which is the essential nourishment of the inhabitants of India, and of one half of the human race. The rice of India, however, is very inferior to that of America. Next to the rice, the plants most precious to the Hindoos are the *cocoa nut* and the *banana* tree. We must not omit to mention the *fig trees* of India, each of which constitutes a little forest by itself; for, from its branches depend innumerable boughs, which, reaching the ground, there take root and form so many new stalks. One is here represented possessing many thousand stalks.



Fig Tree.



Sugar Cane.

The *sugar cane* is a native of many parts of the torrid zone, and has for its principal districts, besides India, China, the Sunda

and Philippine Islands, the Mauritius, the Southern United States, the West Indies, Venezuela, and Brazil. The plant was found wild in several parts of America, on the discovery of the continent, and occurs in a wild state on many islands of the Pacific.

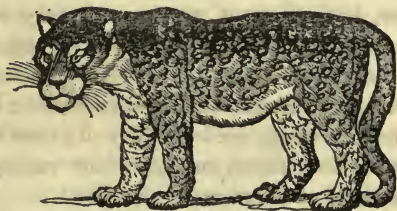
Among the various useful vegetables which India furnishes in abundance, but of which we have already spoken, are the *sesame*, the *cotton plant*, and the *white poppy*, also a species of *rush palm*, the *ratan palm*, whose stalk produces tufts of flexible twigs of immense length, having at intervals a knot and a leaf, and resembling enormous reeds. They are used in the manufacture of mats, baskets, ropes, and especially canes, very much in request on account of their great flexibility.



Tiger.

Passing now to the animals of India, we must rank foremost the *royal tiger*, with black stripes, which is the terror of these

countries to such a degree that, in certain regions of the interior, the villages are encompassed with high palisades, near which are erected wooden cages, whence the hunters waylay the passage of the monster, which prowls by night around the abodes of man. The *leopard*, almost as large, and of the same family as the



Leopard.

tiger, has also tawny hair, thickly studded with black spots. There are, likewise, *ounces* and *guepards*, or tiger hunters, which the Hindoos train for the chase. Next to the tigers,



Elephant.

the most remarkable animals of India are the *elephants*. These animals, in the savage state, live in the forests, in more or

less numerous bands ; but after being taken in snares and subdued by hunger, they may be tamed ; and multitudes of them are found in the cities of India, employed as beasts of burden, bearing on their backs divers loads, or travellers, sheltered from the heat by a kind of tent or palanquin ; the elephants are used by the princes and nobles for luxurious riding and occasions of parade. They also form a part of the force of armies, and are used in the hunt of the tiger and other animals. They are fed with the leaves of the cocoa nut tree ; their tusks or teeth furnish *ivory*, that white, hard, and precious substance, which may be carved and wrought into thousands of costly or useful articles. *Camels* are common in the north of India. The *oxen* and *cows* are of small size, but held in such extreme veneration by the Hindoos, that the touch of a cow is believed by them to absolve one from every crime. Even to the present day, some of these oxen are considered as consecrated to the divinity, and are called *brahmin oxen*. They may be seen wandering unmolested through the Hindoo villages, entering the markets, and appropriating, without opposition, whatever herbs or vegetables suit their fancy. The merchant who is favored by this preference esteems it a great honor, and a cause of rejoicing.

The ox presents in India many varieties, as the *zebu*, remarkable for one or two fat humps which it has on its back, and the

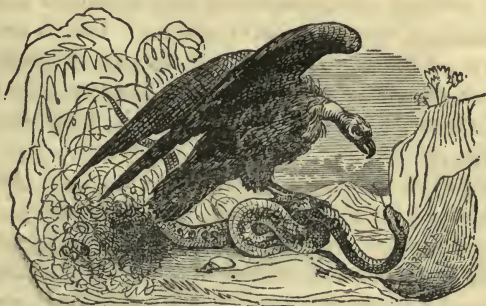


Hedgehog.

buffalo, which exists in the savage and domestic state, and delights especially in the marshy portions, &c. Troops of *stags*

and *antelopes*, of many species, may be seen in all the mountains. The *porcupine*, a species of hedgehog, with long quills, conceals itself in the hollows of the rocks. The forests are full of *monkeys*, which appear in numerous companies, devastate the fields and orchards, and intrude themselves even into the cities.

Birds are very numerous in India, but few of them are birds of song. It is in the north of this country that the beautiful *falcons* are found, which were formerly trained to pursue other



Falcon.

birds—a sport which was for centuries a passion of the noble lords of Europe. There also are found huge *vultures*, the largest of the birds of prey. The south abounds in parrots of all colors. And in all the forests may be encountered, in the wild state, troops of *peacocks*—those birds whose plumage and train, completely bespangled with eyes, have often delighted our gaze.

Among the remarkable reptiles of this country are many *serpents*, of all sizes, some of which are very venomous, and glide about every where, sometimes even stealing into houses. The most celebrated are the boas, surnamed the *kings of serpents*, and which attain 30, and even 40 feet in length. Their teeth contain no poison; they stifle and crush their prey by encompassing it with their folds, plaster it over with saliva, and enormously distending their jaws and throat, swallow up dogs, stags, and even, it is said, oxen. While digesting the enormous mass of

food with which their stomach is thus loaded, they remain in a state of profound torpor, during which they are harmless. As if the Creator had designed to provide a remedy for evil, there exist in India many animals hostile to the serpents, and which wage desperate war with them, as the *mangouste*, a small animal, of the size of the cat, which evinces an insatiable ardor in destroying these reptiles.



Boa.

Among the insects should be specified innumerable *mosquitoes*, or *gnats*, whose sting causes cruel irritations; certain *worms*, which insinuate themselves under the skin, and inflict acute pain; finally, another insect, which, by piercing certain fig trees of India, gives outlet to the *lacker*, in which resinous juice it immerses itself, and produces a quantity of worms, which soon disperse and make similar punctures on other portions of the tree. The *lacker* yields a very durable red color; it is used in the manufacture of sealing wax, and in the composition of varnish. It is collected twice a year.

The population is of the white race, but the lower classes are very swarthy, and almost black, owing to the excessive heat. The Hindoos are weak and effeminate, lack courage and energy,

and cannot march with the equipment of a European soldier. Their feet and hands are astonishingly small, and their bodies of such extraordinary suppleness, that inimitable jugglers and tumblers are met with among them. They are generally indolent, cunning, very adroit, tolerably well informed, and civilized, but



Hindoos.

extremely superstitious, and subjected to the gross or cruel worship of innumerable idols. Owing to the zealous labors of Christian missionaries, many thousands have, however, renounced idolatry. In the north there are many Mahometans.

4. **INDO CHINA.** — Asia possesses still a fourth great peninsula, which is Indo China, situated between the Bay of Bengal, on the west, and the China Sea, on the east. It terminates at the south, in the peninsula of *Malacca* and *Cape Romania*, which stretches almost to the equator.

This country presents a varied aspect: at the north are very high mountains, whence flow great rivers, which form immense valleys, terminating in low and damp, but very fertile plains.

The climate is extremely hot, although slightly tempered by the vicinity of the sea and the dampness of the soil. Cold rains, which last about two months, take the place of winter.

Indo China abounds in precious minerals, such as *rubies*, *topazes*, and *sapphires*. The ruby is a precious stone, which ranks next to the diamond; there are various species, of a hue more or less red; the *Oriental ruby*, of a brilliant red, is the most choice: when large it is termed *carbuncle*; this is the name by which it is designated

in the Bible as having adorned the breast of the high priest of the Jews. (Ex. xxviii. 18.) *Topazes* are precious stones, of a bright golden yellow, very much used in jewelry; the *Oriental topazes*, of a lemon-colored hue, are particularly prized. The *sapphire* is generally blue; the *Oriental sapphire*, for example, which is the most renowned, is of a beautiful sky blue.

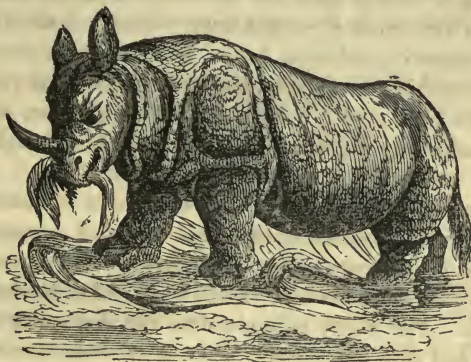
Moreover, almost all the rivers of Indo China contain particles of gold, which are collected by the washing of the sands: these being violently agitated in a basin of water, the gold, which is heavier, settles at the bottom, while the sand is swept away by the water. In this manner considerable quantities of gold are obtained. Of all the countries in the world, the peninsula of Malacca is the richest in *pewter*: this is also procured by washing the sands which contain it, vast deposits of which are found in this country.

Vegetation, favored by a hot climate and a well-watered soil, displays in this country extraordinary vigor. Indo China possesses the same vegetables as India; for these two countries, lying adjacent to each other, are very similar in climate and productions. We will not here repeat the list of plants which are common to both, but add only the names of a few, which, although found in India, are particularly abundant in Indo China. Such are the *iron wood*, a tree so called on account of its hardness and weight, and which is used in the construction of weapons of war, agricultural implements, or furniture; and the *ebony wood*, a tree valuable for its hardness and its rich black color, susceptible of a fine polish. The ebony only acquires this fine color gradually, with age, and then only in the heart of the tree, the rest of the trunk being of a whitish hue, and not very hard. Other hard woods, dyed black, are now often substituted for ebony; but it was formerly used very extensively for the most delicate and costly furniture.

Among the alimentary plants, which abound in this peninsula, are the *ignames* and the *ananas*. From these countries, moreover, is procured a very useful substance, introduced into commerce within a few years, the origin of which is now known; this is the *gutta percha*, a species of gum of a grayish white, very solid, and possessing a certain flexibility; it is now much employed in

the manufacture of straps, tubes, and vessels of every description, and especially for enveloping the iron wires of submarine telegraphs, to preserve them from contact with the water.

The animals of Indo China are also the same as those of India. In the former are found more white elephants, which are very rare, and are the object of an extraordinary veneration. As the souls of great princes are supposed to inhabit the bodies of white elephants, the King of Siam offers rich rewards to the huntsmen who are so fortunate as to take them. A palace is reserved for these revered animals; each has a separate stable and ten keepers for its servants. The tusks of the males are adorned with golden bells, a chain of golden network covers the tops of their heads, and they are served in golden dishes; the king never mounts them, from the fear of seating himself upon a majesty no less adorable than his own. The *rhinoceros*, after the elephant the



Rhinoceros.

most powerful of terrestrial mammalia, may often be encountered in the vast forests of this peninsula. The horn which it bears on its nose, and which is only attached to the skin, is rarely used by it as a defensive weapon; for this peaceable animal, although very fierce and intractable, never makes an attack. It subsists on leaves and roots, living solitarily in the depths of the woods, in the neighborhood of rivers, where it is fond of wallowing in the mud. It is heavy, and has short legs; but if any thing occurs to

arouse its fears or its rage, it bounds forward with fearful swiftness, overthrowing and trampling under foot every thing which it meets in its path, and uttering such cries as cause the most intrepid hunter to quake with fear. But as its sight is poor, and as it always darts forward in a straight line, one can escape it by slightly deviating from his course, if mounted on a fleet horse. As, on the other hand, its sense of smell is very acute, it cannot be approached within musket shot, except by advancing in the direction contrary to the wind, and then can only be killed by a blow on the head, owing to the uncommonly thick skin, which covers its body like a species of cuirass. The inhabitants of the countries where these enormous animals are found hunt them for the sake of their horn, to which they attach marvellous properties, for the flesh, which is esteemed very good, and for the skin, of which excellent carriage braces are made.

Another curious mammal, which abounds especially in the peninsula of Malacca, is the *tapir*—an animal not unlike the hog,



Tapir.

although much larger; it differs from it, however, in its brown, or black, and nearly bare skin, in the form of its claws, and particularly in its snout, which is fleshy, and movable in every direction, and of which it avails itself, with much skill, in tearing up from the river the roots of the aquatic plants which supply its nourishment. It is a sullen and timid animal, inhabiting forests, and particularly partial to damp places, swimming very well, and in case of necessity capable of defending itself from its enemies. Its flesh is unpalatable; but its skin, when dried, becomes very hard, and may be turned to account. In the wildest forests of Indo China, or of the peninsula of Malacca, travellers sometimes encounter the curious animal known by the name of *orang outang*, of all the monkeys the one which most resembles man,

owing to which circumstance it has received its name, signifying *man of the woods*. They are not easily procured, and will soon, probably, have vanished from the face of the earth. *Monkeys*



Orang Outang.

of the common species are extremely numerous in Indo China ; one variety of *white monkeys* is almost as much venerated by the inhabitants of Siam as the white elephants. *Birds* are very numerous, and many of them are clothed with magnificent plumage.

The population belongs both to the Mongolian, or yellow race, and to the Malay race, (which derives its name from Malacca,) characterized by a reddish-brown skin. The greater part of the inhabitants are idolaters, and worship the false god Booddha ; those of the Malay race are mostly Mahometans. At the west, in the Birman empire, there are flourishing Protestant missions ; at the east, in the countries of Siam and Cochin China, are also numerous Catholic missions, which, although frequently persecuted, have exercised a great influence in this country for two centuries.

5. COREA.—The fifth of the great peninsulas of Asia is *Corea*, situated between the Sea of Japan on the east, and the Yellow Sea on the west; the *Strait of Corea* separates it from the Islands of Japan: this country is almost entirely barred and unknown to the Europeans. Its productions appear to be the same as those of China, of which we shall soon speak particularly. On the coasts, the fishery, especially that of pearls, seems to be very profitable. The population, of the same race as the Chinese, — that is to say, Mongolian, or yellow, — is governed by a king dependent on the Emperor of China. We will enlarge no further upon a country so little known.

6. KAMTCHATKA.—The sixth and last of the great peninsulas of Asia is *Kamtchatka*, of which little was known until within 150 years, through the voyages of Captain Behring. It takes its name from a river which traverses it. It terminates at the south in *Cape Lopatka*. The aspect of this country is mountainous and gloomy, the climate harsh and cold, the vegetation poor and little varied; pastures, however, are found there, potatoes thrive in some places, and forests of birch and fir trees are quite abundant.

The animals of Kamtchatka are its most remarkable feature. The natives live almost entirely on the product of the fishery or the chase. The sea furnishes them with *morses* and *seals*, for whose teeth, skin, and tendons they find a use, and whose



Ermine.

flesh supplies them with food, whilst the fat affords them oil for their long winter nights. Great quantities of other fish are also caught on these coasts. In the forests of this cold country are found some of the finest fur-bearing animals, such as the *black* or *silver fox*, whose skin is sometimes valued at two hundred dollars; the *sable*, a small animal of the size of a squirrel, whose beautiful dark-brown skin is prized very highly; the *ermine*, another animal of the same family, whose fur, of a dazzling white, has long been used to ornament the robes of dignitaries and ladies; also the *wolf*, and the *bear*, which the Kamtchatdales fearlessly pursue.

Another animal, much appreciated by the Kamtchatdales, is the *economical field mouse*, a very interesting species of rat. These animals subsist on roots; they are careful to select the most excellent, skilfully cut them up, dry them, and afterwards transport them to their storehouses — a kind of cellars arched with moss, where they dispose them in perfect order. It is a piece of good fortune to the natives to discover these storehouses, in which they sometimes find thirty or forty pounds of roots; but they always leave behind a portion of the provisions, as we leave a remnant of the honey in our beehives. The field mice seem to foresee the rainy summers, whose inundations must inevitably submerge their burrows; and they are then seen to assemble in the spring in innumerable companies, and to emigrate in a mass, directing their course westward. Nothing impedes them — neither lakes, rivers, nor mountains. They march straight forward, halting at sunrise to rest during the day, and resuming their journey at nightfall. In the month of July they pause, having in three months accomplished a journey of seven hundred leagues. On setting out, their columns are so numerous that it takes them two hours to defile; but on their return, which occurs the same year, in the month of October, the foxes, ermines, birds of prey, and excessive fatigue have carried off nearly half of them. The Kamtchatdales, far from harming, aid them in every possible way, and rejoice to see them return, knowing from experience that the foxes and sables, which seek to make them their prey, will follow in great numbers, and become, in their turn, the prize of the hunters.

But the most useful of all animals to the Kamtchadales are the *Siberian dogs*, which they employ in the winter to draw their sledges: these dogs, which greatly resemble the wolf, and bay like him, run with extreme agility. A good dog can draw as much as 160 pounds, and accomplish 10 or 12 leagues a day,



Siberian Dog.

however long the journey may be. Twelve of them are usually required to complete the equipment of a sledge. The best trained and the most intelligent is placed at the head, and on him depends the safety of the traveller, for he is expected to lead his companions in the desired direction, and prevent their wandering from the path to follow the tracks of animals, imprinted on the snow. This animal's capacity for subsisting on fish, and for running over the snow without sinking, makes it preferable to all others, and especially to the horse, which it would be difficult to maintain in these cold countries of the north. In summer, also, these dogs are sometimes used for towing the boats which ascend the rivers; but they then suffer much from the heat, and from the attacks of mosquitoes or venomous gnats.

The population belongs to the Mongolian race. The Kam-

tchatdales are small of stature, have a large head, wide mouth, prominent cheek bones, and a scanty supply of black hair. They clothe themselves in skins, and live in excessive filth. They subsist chiefly on fish, and drink with apparent relish the fat of the seal and the oil of the whale. Their dwellings consist of a summer and a winter house. The former is a wooden cabin, covered with a turf roof, and supported on posts a dozen feet above the ground. The latter is a large hole, five feet in depth, surmounted by a frame, in the top of which is an aperture, which serves at the same time for a window, door, and chimney. They pass in and out by means of a species of ladder placed against the opening. There is a door for the women on one side of the cabin, by the use of which, however, the men would be disgraced. The interior of these habitations is filled with clouds of smoke, and impregnated with a shocking odor. The air and light scarcely penetrate within, and a whole family is there confined in the same enclosure, with garments of skin, dogs, and provisions of meat and fish, often in a corrupt state. The Russian merchants, who every year resort to this country in search of furs, give in exchange, to the inhabitants, utensils of iron and copper, and various products of civilization, which are regarded by the poor Kamtchatdales as unparalleled wonders.

With respect to their religion, they are almost all converted to Christianity, although preserving a great number of their ancient superstitions, and especially the terror of schamans, or sooth-sayers.

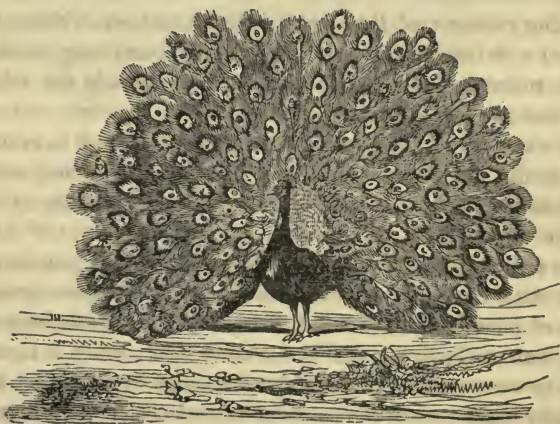
SECT. 3. MOUNTAINS OF ASIA.—Having acquainted ourselves with the peninsulas of Asia, which are certainly one of the most interesting portions of this great continent, its *mountains* next claim our notice.

The whole centre of Asia forms a high country, of almost twice the extent of Europe, generally rocky, sandy, or barren, in many places very elevated and cold, and surrounded on all sides by the vast chains of mountains which will now engage our attention.

1. HIMALAYA.—The high country of Central Asia is bordered on the south by an immense chain of mountains, which, like a gigantic wall, separate it from the hot and luxuriant plains

of India ; these are the *Himalaya Mountains*. This chain, whose name signifies the *abode of snows*, includes the loftiest mountains in the world ; Mount Kunchingga, for example, rises more than 28,000 feet ; (this is about double the height of Mont Blanc, the highest mountain in Europe.) All the peaks of the Himalaya, as their name indicates, are covered with eternal snows ; but on their sides and at their base is found the most superb vegetation ; among other plants, forests of *horse-chestnuts*, those beautiful trees which have been transplanted to this country to ornament our gardens and avenues, and *rhododendrons*, magnificent flowers, numerous varieties of which have been discovered on the sides of the Himalaya at heights where in Europe are found only eternal snows.

Himalaya, in its beautiful valleys, enjoys a temperate and extremely healthful climate. It abounds in gold ; but it is especially remarkable for its animals — for instance, its superb *peacocks*, which are found in a wild state, and wander at large in



Peacock.

the forests, as likewise in almost every part of India. This bird, now domesticated in our poultry yards, is noted for the magnificence displayed in the feathers of its tail, when spread in the form of a fan. Among the ornaments of these mountains

are the *resplendent lophophores*, large and magnificent birds, remarkable for their superb crest or plume, and their neck of dazzling green, beneath which gleam many rings of gold and azure, while their wings of blue, blended with emerald green, fold over their green back in lines of purple and gold.

But the most interesting animal of Himalaya is the musk, a



Musk.

charming creature, of the size of a young roebuck, without horns, covered with rough, brown, or tawny hair, contenting itself only on the rocky summits of the highest mountains, in the midst of rocks and precipices, where it displays all the lightness and agility of the chamois; it seems to be even more wild, and to prefer the night to the day for its excursions. This timid animal, which is found on the icy summits of almost all the mountains of upper Asia, is the object of an incessant pursuit, on account of its very choice perfume, which is accumulated in a kind of pouch, placed under the body of the male. This substance, known under the name of *musk*, is almost solid, clotted, of a blackish brown, and of an extremely lively and penetrating odor, which it communicates to every object with which it comes in contact. It was formerly much more in use than at present in perfumery, and among persons of high rank; in pharmacy, it is introduced into the composition of many remedies. It is often exported to us greatly adulterated by mixtures of dried blood, resins, &c., the whole, however, enveloped in the pouch which is supposed to have been taken from the animal. The best musk comes from Tonguin and China.

2. THE SINECHAN. — The *Sinechan*, or *Mountains of Indo China*, almost as high as the Himalaya, form a vast group, whence issue, like the fingers from the hand, five principal chains, which descend towards the south of the peninsula, separating the four rivers and the four great valleys, of which this country is composed. These mountains, as we have already seen, furnish *gold, rubies, topazes, and sapphires*. Their slopes are covered with almost impenetrable forests, containing all the plants of the warm countries, peopled by an incredible quantity of *parrots*, and birds of magnificent plumage, but incapable of song; *monkeys*, which often cause great havoc in the plantations; *bats* of all kinds, some



Bat.

of which are very large, and concerning which absurd stories were formerly related, purporting that they sucked the blood of animals and men whom they surprised asleep. It is true that some of them destroy great numbers of little birds, and commit such ravages in the orchards, that, in order to secure the preservation of the fruit, it must be surrounded by nets. The *vampyre*, for example, the form of whose head has given it the surname of *flying dog*, is a mammal, whose body is one foot in length, and which measures five feet from the extremity of one wing to that of the other. The vampyres are generally fierce, living in the wildest portions of forests, where, during the day, they hang from the trees by the hind feet, and cling so tenaciously that, if slain in this position, they do not fall. When young, they are eaten by the inhabitants; they have then a delicate flavor, but are too strongly perfumed with musk to suit the taste of Europeans. It is a curious and interesting circumstance, that, in many species of this family, the females have pouches on each side of the body, in which they place their young, in order to transport them with

ease when flying; for they never separate from them until they are large enough to take care of themselves.

3. THE YUNLING. — The *Yunling*, or *Chinese Alps*, separate Upper Asia from China proper, where they send forth a great number of ramifications. The Yunling contains abundant mines of *rock salt*, which have long been worked by the Chinese. Farther down, at the foot of the mountains, they have excavated thousands of pits of great depth, from which salt water is obtained, and as a great number of these pits emit hydrogen gas, they set fire to it, and employ it in distilling from the salt water the crystal salt. The vegetation of these mountains is little known to us; it is that of the temperate countries. We are, however, familiar with some of the beautiful birds which sport in the forests of these mountains, the most remarkable of which is the *golden pheasant*



Golden Pheasant.

of *China*; its body is of a fiery red; hanging backwards on its head it has a tuft of golden yellow; its neck is encircled by a magnificent orange-colored collar, spotted with black; the upper part of its back is green, and the lower part yellow; the wings of a lively red, with a beautiful blue spot; and the tail very long, brown, and dappled with gray.

4. THE KHIN-GAN MOUNTAINS. — The *Khin-gan* moun-

tains, or *Mountains of Mantchooria*, north of the preceding chain, also extend ramifications even to the Sea of Japan. Their sides are covered with immense forests, similar to those of all cold countries, and present especially maples, firs, and birch trees. Thence, also, is obtained the *rhubarb*, the only production of Upper Asia which is the object of a universal commerce. Rhubarb is a plant with enormous leaves, which grows in all these mountains in the Himalaya, and also in the Island of Socotra, where the best is found. Its root is of a lively and brilliant yellow, and is esteemed an excellent cathartic. The *rhubarb of Moscow*, so called because it is exported from Russia, is, next to that of Socotra, the most esteemed in medicine, being preferable to that of China.

5. THE YABLONNOI MOUNTAINS. — The *Yablonnoi Mountains*, west of the preceding, border Upper Asia on the north-east as far as Lake Baikal. These are very cold mountains, where are found some silver mines and fur-clad animals. The *argali* is also hunted there — an enormous wild sheep of the size of a deer, and which is regarded, together with the mufloo, as the progenitor of all the domestic sheep. It has very large, strong, and triangular horns. It inhabits the cold regions of Upper Asia, where it is sought for the sake of its flesh and fat. It may be seen leaping from rock to rock with incredible swiftness and prodigious strength, and it would be impossible to overtake it, if it did not frequently pause in the midst of its career to regard the hunter with a stupid air, and wait until within the reach of the latter before recommencing its flight.

6. THE ALTAI MOUNTAINS. — The *Altai Mountains* (which are divided into the Great and Little Altai) are situated west of the preceding. These are also very cold mountains, to which the fir tree gives a physiognomy similar to the severe aspect of the high Alps. But the summits of all these mountains of the north of Upper Asia, are generally rounded, and consequently of a monotonous and gloomy appearance. The Altai are chiefly remarkable for their immense mineral riches, their deposits of *auriferous sands*, from the simple washing of which particles of gold are extracted. One proprietor, in the third year of his exploration, is said to have realized, in a single summer, a net profit

of nearly two millions. All the gold seekers affirm that the want of workmen alone prevents their doubling and trebling their gains. In 1830, the product of the mines of this country amounted to only three millions; fourteen years after, it had increased to sixty millions.

Grants of the mines are made by the Russian government, the ruling power of this country, for the space of twelve years, to men of all nations; each lot, however, is of small extent. The washing of the sands is performed under the supervision of government agents, and thousands of workmen — criminals condemned by the law, — daily deliver submissively into the hands of an inspector the treasures which they have collected.

The exploration of the auriferous sand is generally very easy: these deposits being usually level with the soil, or only covered with a thin layer of vegetable earth, it is rarely necessary to dig deep.

7. THIAN-SHAN MOUNTAINS. — The *Thian-Shan Mountains*, west of the preceding, little elevated and but little known, are especially remarkable for their numerous cattle and wild horses, as also for the *onager*, or wild ass, which is there encountered, and which is now only found in its native freedom in this portion of Upper Asia. The inhabitants of the country (the Kal-mucks) regard it as excellent game, and hunt it for its flesh, and for the profit derived from its hide, of which *shagreen* is prepared — a very hard species of skin, covered with little round dots, which is used in the manufacture of scabbards, and in bookbinding. No animal treads the borders of precipices, or the rocky defiles, with so sure a foot; it runs with extreme swiftness, and sustains this pace longer than the best horses. Finally, its sobriety would render it a perfect animal, if it could be tamed, so as to be mounted without danger; but unfortunately this is not possible. The *onagers* live in innumerable troops, and defend themselves courageously against ferocious beasts. In order to take them, nets are employed, which are spread in those places where they are in the habit of going to drink.

Two chains of mountains form the western border of Upper Asia, and connect Soongaria with Himalaya: these are the *Mong-Tagh*, (or mountains of ice, at the north,) and the *Bolor-Tagh*,

(or mountain of clouds,) which at the south unites with Himalaya.

8. THE MONG-TAGH. — The *Mong-Tagh* contains also many wild animals, and in particular the *djigktai*, or *hemione*, a charming animal, which resembles the horse and wild ass in its proportions, while in form it compares with the mule, although it has more slender legs and a more graceful carriage. Its hair is of a dun color, with a mane and a black line on its back. It lives in companies, often composed of more than a hundred; it is very vigorous, and can accomplish, it is said, a distance of 60 leagues without rest; it runs much faster than a horse, and when the inhabitants of these countries wish to take it for the sake of its flesh, which they find excellent, or to possess themselves of its hide, they are obliged to spread snares, or lie in wait for it, (by night,) and kill it with a musket. No one has ever succeeded in domesticating it. The *Jardin des Plantes*, at Paris, contains several of them.

9. THE BOLOR-TAGH. — The *Bolor Mountains* are but little known. We shall specify only a single animal peculiar to them, whose appearance and form are very singular. This is a small species of ox, the *yack*, called also *horse-tailed buffalo*, and *grunting cow of Tartary*, on account of a certain deep, monotonous, and swine-like grunting. The yack has on its shoulders a hump garnished with a tuft of hair, still longer and thicker than that which covers its whole body, and hangs almost on the ground, which gives it a very remarkable aspect. The yack, in its wild state, is only found in the coldest latitudes of the mountains of this portion of Asia. It is a ferocious animal, which



Yack.

delights in the shade of forests bordering on rivers, where it is fond of bathing and swimming during the heat of the day, and wallowing in the mire. The Tartars have succeeded in taming

it, and nourish themselves with its milk, of which they also make an excellent butter, which is despatched in sacks of skin throughout Upper Asia. They employ this animal for carrying burdens, and for drawing wagons, or the plough. Its flesh is esteemed, and its hair is used in the manufacture of coarse stuffs; but its tail, especially, is of great commercial value. Of it fly flaps are made; and the Chinese, after having dyed the hair red, use it in the form of plumes to ornament their caps; among the Turks, these tails, attached to the end of a lance, become the ensigns of the dignity of the pacha, (governor of a province;) this dignity is of greater or less importance in proportion to the number of these tails, which he who is invested with it is entitled to have borne before him; thus they say, a pacha with two, with three tails, &c.

In Western Asia are many other chains of mountains, of which we propose to mention the principal.

10. THE URAL MOUNTAINS.—Of the *Ural Mountains*, between Europe and Asia, so rich in their jewels and precious metals, we have already made sufficient mention.

11. THE CAUCASUS.—The *Caucasus* stretches from the Caspian to the Black Sea, like an immense wall, which can only be surmounted in three places, at the two extremities, and towards the centre by means of a defile, where a band of a few hundred men would be sufficient to arrest an entire army. The highest peaks are covered with eternal snows; thus it is called in that country by a name signifying *icy mane*. The less elevated summits are crowned by excessively thick forests, and separated from each other by steep and narrow valleys, forming complete abysses.

The Caucasus presents, at its two extremities, very extraordinary phenomena; on the western side little volcanoes, which discharge warm mud; and at the extremity, which borders on the Caspian Sea, pits of naphtha, from which issues inflammatory gas. These pits are a source of wealth to the country. The flames which escape from them, in a space of about a quarter of a league in circumference, attract thither Hindoos and Persians, adherents of the ancient religion of Zoroaster, who, worshipping the sun and fire, there hold one of their most ancient

and revered sanctuaries. The inhabitants of this country dig pits 30 feet in depth, in which the oil of naphtha gradually collects in considerable quantities. They make use of it as oil for their lamps; it even supplies the place of wood, which is very rare, and serves to heat their houses and cook their food. For this purpose they throw upon the hearths of their fireplaces a few handfuls of earth, moistened with naphtha, which they set on fire. It lights immediately; and with the precaution of stirring this mixture, they are enabled to cook their food more quickly than with wood. It is true that this combustion diffuses a thick smoke and a very disagreeable odor; but of this the inhabitants of the country do not seem to be conscious.

Many cattle are raised in the Caucasus, and on the highest summits are hunted the *chamois* and the *bouquetin*, species of



Chamois.

wild goats, very difficult of approach among the abrupt rocks, which are their favorite haunts: they afford a most excellent game.

The Caucasian chain forms, as it were, an independent country by itself, where the men and women are generally of such remarkable beauty, that, in order to designate our white race by the finest specimens which it presents, we denominate it the *Caucasian race*. Unfortunately, the greater part of the inhabitants of Caucasus have extremely rough and violent manners; these terrible mountaineers often descend unexpectedly upon the vil-

lages of the neighboring plains, for the purpose of carrying off the inhabitants, whom they reduce to slavery, or only restore on payment of heavy ransoms ; some of them even sell their wives, daughters, or sisters, to be transplanted to the seraglios of the Turks ; for it is from these mountains that the latter obtain their most beautiful slaves. Some of these people are Christians ; the greater part Mahometans : the latter have for many years zealously defended their independence against the Russians.

12. THE TAURUS MOUNTAINS.—South of the Caucasus is found the chain of Taurus, whose highest summit, *Ararat*, (16,000 feet in elevation,) has acquired a lasting celebrity, because it was there that the ark of Noah rested, after the deluge. The name of this patriarch is always held in great veneration in this country, where the place of his burial is yet pointed out. This excessive reverence has even prevented the inhabitants (the Armenians) from attempting the ascension of this mountain. They believe that the remains of the ark are, even to this day, preserved on the summit of the great *Ararat*, and that God has, on this account, prohibited its approach to all mortals. Of later years some Russians have attained its summit, in spite of the ice and snow, but have found nothing to repay them for the ascent, save a magnificent and very extensive view of all the surrounding countries.

The *forests* of Taurus are generally very fine, and often present a rare spectacle to a European traveller. The cherry, and the greater part of our fruit trees, are natives of Asia Minor. You will not, therefore, be astonished to learn that the most singular combination of fine fruit trees and magnificent building woods may frequently be observed in these forests ; plum trees of every kind, whose red and yellow plums strew the ground, by the side of pines and larches ; cherry, pear trees, and vines, mingle confusedly with birch, maple, and chestnut trees. These rich countries would be in every respect blessed, if the enterprise and wisdom of their inhabitants corresponded with the lavish gifts of the Creator.

13. LEBANON.—South of Taurus, and along the coasts of the Mediterranean, we encounter the double chain of *Lebanon*,

so celebrated in our sacred writings, that *holy mountain* which Moses so earnestly desired to contemplate from afar before he died, (Deut. iii. 25,) so majestic in its rich vesture of cedars, so animated by its innumerable gushing streams. Lebanon, whose name, signifying *white mountain*, is suggestive of the snow which crowns its high summits, was formerly celebrated for its *cedars*, a very fine grained and almost incorruptible species of pine, of which the famous navigators of Tyre made masts for their ships, and of which King Solomon made use, in the construction of the magnificent temple of the true God, at Jerusalem. But, in conformity with the numerous threats pronounced by our Lord, there now remain but feeble vestiges of these splendid forests of cedar; seven only, upon the peak usually visited by tourists, are remarkable for their size and age, and might even date back to the time of Solomon. Accordingly, every year, in the month of June, the Catholic populations of the neighborhood ascend to the cedars, and celebrate mass at their feet. As for the Arabians, their veneration for these trees is such, that they attribute to them a soul and a wisdom superior even to the instinct of animals.

The less lofty summits are generally rounded, and almost all cultivated to the very top. Thousands of walls sustain, on the sides of the mountain, the arable land otherwise in constant danger of falling away. The slopes, thus fortified, present the appearance of a staircase. A single declivity displays from 100 to 120 of these terraces, completely covered with grain, vines, olive and mulberry trees; and here and there, in the midst of these clusters of trees, may be seen peeping forth a neat white village, perched on the heights.

Lebanon is composed of two parallel chains — *Lebanon*, properly so called, at the west, and *Anti-Lebanon*, at the east, of which we shall speak further, in connection with the high country of Syria.

SECT. 4. PLATEAUS OF ASIA.—The name of *plateau* is given to a country the whole of which is elevated, and more or less level. Thus the immense countries of Upper Asia, which are encompassed by the Himalaya, the Sinechan, the Yunling, &c., form a vast table land, known by the name of the *Oriental*

Plateau, a cold country of deserts and steppes, which is divided into five secondary plateaus.

1. THE PLATEAU OF THIB'ET. — *Thib'et*, north of the Himalāy'a, is the highest country in Asia, and probably in the whole world; habitations are found there at heights almost equal to that of Mont Blanc. The aspect of this country is generally very mountainous, rocky, and wild; travellers for whole months descry only mountain peaks, intersected with narrow defiles and deep abysses, which sometimes render it necessary to traverse ledges so narrow, that the horses find but just room to place their feet.

The climate is generally cold; the winters are very long, and of a severity of which we have no idea. The sky is then almost constantly clear, and the sun dazzling; nevertheless, it is so cold, that the vapors which exhale with the breath, congealing on the beard and mustache, there form icicles; great precautions must be taken to keep one's ears and nose from freezing; often in the direction pursued by the great Chinese caravan, which annually performs a pilgrimage to pay homage to the sovereign pontiff of Thib'et, the road is lined with bodies of animals and bones of men, that have perished of cold; a French missionary affirms to have seen fifty wild oxen, which were suddenly frozen and caught in the ice, while attempting to swim across a river.

The vegetation is generally quite poor; but in the deep and very open valleys, or along the rivers, the very ardent heat, peculiar to the summer of these regions, not only permits the cultivation of our grains and fruit trees, but also that of the vine, tobacco, herbaceous cotton, and even rice.

The animals are numerous and various. Thibet contains wolves, bears, tigers, and panthers, which, however, only venture from India during the summer months. There are found almost all kinds of domestic animals — the camel, horse, ox, ass, &c., besides the yack, the chevrotine musk, and especially the famous *Thibet* or *Cashmere* goat, renowned for the very fine wool which grows among its hair, and of which the rich and elegant *Cashmere shawls* are manufactured: these shawls, which constitute the principal ornament of the women of the East, and which are also worn by the men, in the form of turbans, were

formerly sold at enormous prices; but since the introduction into other countries of flocks of Thibet goats, by means of whose wool these fine fabrics have been imitated, their price has greatly diminished. Thibet produces also another peculiar goat, which yields the *bezoar*, a stony substance, which is formed in the intestines of this animal. This substance was formerly very much used in medicine, and the inhabitants of Upper Asia have so much faith in its virtue, that every Thibetan carries about his person a little bag of it, as a talisman against all evils. The *large-tailed sheep* is also found there, whose tail is of such enormous bulk, that it sometimes weighs 10 or 12 pounds. The tails of some of these animals are so heavy, that in a certain portion of Africa it is necessary to support them in a little wagon, which the animal drags along after it.

The population of the Mongolian race are indolent and very superstitious. Infanticide, especially of girls, is very common among them. They also, it is said, cook their dead, and throw the body in fragments to dogs and vultures; those who do not leave money enough to pay the manglers are thrown into the water, burial being held dishonorable. They are idolaters, worshippers of the god Booddha; the *lamas*, or priests, compose nearly a third of the population. Their habits, and many ceremonies of their worship, have affinity to those of the Catholic church. They have two supreme pontiffs, the *Dalai-Lama*, who is deemed an incarnation of the soul of Booddha, and the *Bandyin*, whose soul, after death, is supposed to be translated into the body of a child, whom the lamas, it is said, have the power of recognizing by mysterious signs, and whom they then bear triumphantly to his capital, where he must be brought up and educated by the principal lamas, until he is of an age to govern. Some *Catholic* missionaries are laboring, in the midst of many difficulties, for the conversion of these idolatrous people.

2. TOORKISTAN AND MONGOLIA. — *Toorkistan* and *Mongolia* occupy, in their greatest length, Eastern Upper Asia, from the Bolor Mountains even to the Mountains of Mantchooria. Farther than the eye can reach, they present an aspect of vast sandy steppes, or rocky deserts. The damp valleys and the borders of the lakes are the only portions susceptible of cultivation. The

celebrated *Desert of Gobi*, composed both of moving sands and fragments of flint, is more than 600 leagues in length, and as many as 150 in width. Even in the desert portions of Tartary, and during the summer, there is something wild and profoundly gloomy in the landscape; nought but vast prairies and immense solitudes are to be seen. Sometimes, however, these plains present a most lively and animated appearance. Above the green-sward of the prairie rise tents of different sizes; and far and wide, the eye can distinguish only immense herds of oxen, camels, and horses: and in the midst of this moving tableau, Tartars on horseback, who, armed with long poles, gallop from side to side, striving to reassemble the scattered members of the flock; the next day this landscape, so picturesque and full of life, is again but a vast solitude; men, herds, and habitations have all vanished; the grass of the plain being entirely consumed, they have found it necessary to seek elsewhere new and fresh pasturage.

As these plateaus are much less elevated than Thib'et, their climate is a little less severe, though still very cold; often, after an oppressive heat, a terrible hurricane suddenly bursts forth, and rain descends, mixed with snow, which, freezing, causes travelers to perish, absolutely bereft of shelter, in the midst of these immense solitudes of the *land of grass* — a name given by the inhabitants to these uncultivated regions.

The vegetation of these plateaus is very poor, especially in Mongolia. There the inhabitants have much difficulty in procuring food, and if called, like the missionaries, to travel in this strange country, one would be obliged every morning, in order to warm himself or cook his food, unless he would live literally on cold water and millet, to first traverse the whole prairie, in quest of scanty shrubs, dried grass, and manure, which last is the only reliable combustible; he would then be enabled to boil water for his tea, the invariable basis of all meals among the Tartars, and to bake in the ashes the cake of barley or millet, the only grains which the country produces. In the fertile and cultivated valleys, the vegetation is similar to that of Thib'et; there are found our fruit trees, and even the vine; hemp and the potato succeed to perfection. With the animals, which are very numerous, we

are already acquainted : they include, besides our domestic animals and the camel, wild cattle and horses, the argali, the onager, or wild ass, the yack, the djigktai, or hemione, large-tailed sheep, and Cashmere goats. It is an interesting fact, and one suggestive of the great goodness and wisdom of Providence, that all, even the domestic animals, require no shelter, and do not appear to suffer, however cold it may be ; this exposure is said to render them even more vigorous, whilst the heat of summer debilitates them extremely. Nature has provided almost all of them with a double coat of fur, the hair of which is long, thick, and crispy. As in Thibet, wild beasts from the southern countries also roam over these plateaus during the heat of summer.

The only mineral worthy of mention is the *jade*, a very hard, white stone, veined with green or red, of which vases, sabre handles, &c., are made, but which is particularly prized by the Chinese on account of certain chimerical virtues which they attribute to it : they believe, for example, that vessels made of this substance break in pieces when poison is placed in them ; that frag-



Mongol Priest.

ments borne about their persons protect them from lightning; and that a beverage taken in a cup of jade calms the irregular palpitations of the heart: the stones which contain the fewest spots and veins are regarded as the exclusive property of the Emperor of China, sovereign of all these countries of Central Asia; and the workmen employed in search of them are obliged to remit every day the product of their labors into the hands of officers charged to receive and examine them.

The population of the yellow race is composed principally of Mongols, properly so called, divided into *tribes*, who are subject to *khans*, placed under the dependence of China. These tribes, for the greater part nomadics, change their encampments 15 or 20 times a year. They are *Booddhists*, and have also sovereign pontiffs, whom they believe immortal, like the Delai-Lama of Thibet. Catholic missionaries, notwithstanding many obstacles, obtain access to a certain number of scattered and often persecuted Christians. (See page 100, a *Mongol priest*.)

3. THE PLATEAU OF SOONGARIA. — *Soongaria* (or country of the *left hand*, because it is on the left, or west, of China) is a plateau even less elevated than the preceding; and it was through its broad valleys, which open like so many doors towards the west, that the nomadic people of Eastern Upper Asia were dispersed over Europe like the waves of a vast inundation, at the time of the great invasion of the barbarians, which took place five centuries after the birth of Jesus Christ. Its aspect is that of a country of steppes and lakes, perfectly arid in the eastern part. The climate is cold.

The vegetation is that of the northern countries, producing a few fruit trees, wheat, barley, millet, and hemp.

The animals are the same as in the preceding countries; the inhabitants raise especially great numbers of horses, and hunt in winter almost all the fur-bearing animals of the more northern regions.

The population of the Mongolian race is composed principally of Kalmucks and Kirghiz, who are constantly transporting their flocks and tents from one valley to another. They are remarkable, especially the Kirghiz, for an extraordinary development of the senses of sight and hearing. At a distance of more than a

quarter of a league, the Kirghiz can discover a man concealed in ambuscade. They are idolaters, and offer sacrifices both to the genius of good and to that of evil.

4. THE PLATEAU OF MANTCHOORIA. — *Mantchooria*, a plateau which belongs wholly to Eastern Upper Asia, being the continuation of Mongolia by the broad valley of the River Amoor, is a country entirely surrounded by mountains, and almost unknown. The climate is cold and severe; the vegetation tolerably productive in trees of all kinds, and in the cereals of cold countries. Among the plants cultivated there, and worthy of our notice, is the *ginseng*, whose yellow root, veined with black, and similar to that of the rhubarb, is considered by the Chinese to be endowed with medicinal virtues so powerful that it sells for its weight in gold. It is a kind of universal remedy for diseases of the lungs or stomach, for poison, weakness of sight, &c. "Administer," they say, "a few grains of it to a dying old man, and he will revive; continue the practice daily, and his vigor will be renewed; and thus he may be sustained for many months." It is unnecessary to state that the Europeans have not experienced the same good effects from the use of this plant as the Chinese.

As respects animals, Mantchooria possesses at the same time the fur-clad animals of the cold and the ounce of the warm countries. Its vast forests are stocked with all kinds of game, stags, deer, and wild boars.

The population is of the Mongolian race. The Mantchoos are more valiant than their neighbors, the Tartars, for they conquered China more than 200 years ago, of which country their chief is always emperor. They naturally form his guard, and the best part of the Chinese troops.

As there is a high plateau in Eastern Upper Asia, there is likewise a corresponding *high plateau in Western Upper Asia*, which extends from the northern plains of India even to the Mediterranean Sea, bearing different names.

5. PLATEAU OF IRAN. — The *Plateau of Iran*, or *Persia*, is formed by two chains of mountains which detach from Mount Taurus, one of which, passing south of the Caspian Sea, continues in a straight line even to the Bolor Mountains, and the other, stretching towards the south-east, follows the borders of the Per-

sian Gulf and of the Gulf of Oman, and afterwards unites with the former near the Bolor Mountains.

The aspect of Iran is generally sandy and arid. It consists of steppes devoid of trees and verdure, destitute of water, and where cultivation is only possible on the condition of the earth's being moistened by artificial water courses. The centre of Iran is indeed a Gobi in miniature: it is a large desert, whose surface is partly covered with a deposit of salt. The mountains, especially those of the south along the Persian Gulf, contain, on the contrary, delicious valleys, which are paradises in freshness, verdure, and fertility.

The *climate* is hot, and often burning, at the south and on the coasts; mild and salubrious in the mountains; cold and exposed to severe winds at the north.

The *vegetation* is very luxuriant in the fertile countries. The gardens, which are the delight of the Persians, are full of magnificent flowers; in the mountains are found complete forests of *rose trees*, with their fragrant blossoms, from which is distilled a perfumed essence highly esteemed throughout the East. This is the primitive country of the *peach*, and many other of our most excellent fruits. Vines of considerable size may be seen there, which stretch their shoots from one tree to another, and present clusters of grapes of enormous weight. Wheat, cotton, sugar cane, and sesame, which last takes the place of the olive, which is wholly wanting, enrich some of the provinces of Persia. The best *saffron* in the world is also cultivated there. The saffron is a small plant without a stalk, whose flowers appear before the leaves, in the month of October, and are immediately gathered; it is their inner fibres, which, after being dissolved in water, constitute the saffron. It is of a yellow and not very durable tint, and is used in coloring butter, vermicelli, creams, and cakes; finally, it is employed in medicine and for dyeing.

Another plant wholly peculiar to these countries is the *assa-fœtida*, from which, by incisions made in the upper part of the root, a lacteous juice is extracted, which hardens in the air, and forms a resin very useful in medicine. It is a singular fact that, whereas the odor of this resin appears fetid and disagreeable to us, the Orientals are passionately fond of it; they mix it with almost all their food, and call it the *delight of the gods*.

Next in order should be named the *salep of Persia*, the root of a plant similar to our field orchis. This root is round or oval in form; the Orientals, who make much use of it, steep it in boiling water in order to remove the bark, and afterwards dry it in the sun. Reduced to ashes, the salep is of a yellowish color, and may be easily dissolved in water and milk for forming jellies. It is nourishing and strengthening, and is recommended to persons who have weak lungs.

We must not omit to mention that Persia furnishes the best *licorice*. This is a plant of the warm countries, which has long roots, yellow within, and on the outside of a reddish hue; owing to its sweet savor and mollifying properties it is very much used in the preparation of diet drinks and pectoral pastes.

The *animals* of Iran are generally those of the warm countries. The *Persian horses* almost equal the Arab steeds in beauty; *camels* are numerous, and it is those of this country whose hair is most in demand for the manufacture of valuable cloth. But the *dromedary* especially is the indispensable beast of burden for establishing communications across the deserts of these countries.



Persians.

Fine asses are also found there ; sheep with immense tails and very fine fleeces ; and goats with silky *wool*. Among the wild animals may be mentioned lions, leopards, tigers, hyenas, and jackals ; locusts are also a scourge to Persia.

The *minerals* are rare and scarcely known. *Salt* is found there in great abundance, and in some caverns of the mountains at the north are scanty deposits of a very rare *bitumen*, which is employed for the healing of wounds, and which is gathered once a year exclusively for the king.

The *population* are all of the white race, generally handsome and strong, of the Mahometan religion, but belonging to a sect hostile to that of the Arabs and Turks. The Persians are very polite in their manners, but crafty, deceitful, and susceptible to bribery. The women never appear in public without being enveloped in one or more veils, which present only two apertures, for the eyes.

6. PLATEAU OF ARMENIA. — North-west of the plateau of Iran, is situated that of *Armenia*, the country where Noah's ark rested, and which was the second cradle of the human race. It is a mountainous and very elevated plateau, the climate of which is salubrious, but cold ; snow may be seen there during more than six months ; often also it falls in June. The vegetables differ according to the elevation : the vine and fruits of the south only flourish in the well-sheltered valleys. Naturalists think, however, that a very excellent fruit, the apricot, was originally from Armenia. The cattle constitute the principal wealth of the population, to which should be added the product of the mines. Those of copper have always been renowned, but the want of fuel and good roads render their exploration difficult and expensive. Naphtha and mineral salt are also found there.

The population is wholly of the white race. The Armenians are usually large and handsome, with black eyes and hair, and somewhat swarthy complexions ; their disposition is amiable and mild : they are hospitable, very much attached to their families, and exceedingly skilful in commerce. They are subject to the Persians, Turks, and Russians, among whom their country is divided ; but many of them have removed to a distance, establishing themselves in almost all the large cities of the East, for

the convenience of their commerce. They are likewise very much oppressed by the nomadic bands of *Kurds*, who range with their cattle through all these countries, and practise every species of depredation and excess. The Armenians are Christians, but of a peculiar sect, who very nearly approach to the Greek church. There are also Nestorians in this country, a very ancient class of Protestants, in the midst of whom Protestant and Catholic missions are now very active.

7. PLATEAU OF ANATOLIA. — The high country continues even to the west of Armenia. Two chains of mountains, which, becoming detached from Taurus, traverse the peninsula of Anatolia, the one along the Black Sea and the other along the Mediterranean, form the *plateau of Anatolia*, remarkable for an almost total absence of trees, which gives it a peculiarly gloomy aspect. We have previously spoken of the productions of this country in connection with the peninsula of Anatolia, and will not again enumerate them. We should, however, mention that it is particularly on this plateau that the *opium poppy* is cultivated, and that the angora goats are raised. There also is cultivated an important tinctorial plant, whose fruits are very much sought in Europe, and more especially in England, namely, the *djehri*, more commonly known by the name of *avignon berries*; this is a delicate shrub, which is propagated by suckers, and whose fruit, of the size of pepper grains, yields a good yellow color: dyers also obtain from these countries many nut-galls, great excrescences resembling a musket ball, which are formed on a species of oak by the puncture of an insect, which there deposits its eggs. Galls enter into the composition of our ink and many dyes.

8. PLATEAU OF SYRIA. — To Mount Taurus and the plateau of Anatolia is attached another very celebrated high country, namely, *Syria*, so often mentioned in Scripture. This country is crossed from one extremity to the other by the Mountains of Lebanon, between whose two chains, the Lebanon and Anti-Lebanon, exists a deep valley.

We have already remarked that the climate of the valleys is temperate and salubrious, and the vegetation very fine. On the coasts it is excessively hot, and the climate is quite unhealthy. The whole country is very subject to droughts, and also to earth-

quakes, which have often overthrown almost entire cities. Locusts are, moreover, a third and no less formidable scourge.

The productions of Syria are *wheat*, *maize*, or *Indian corn*, and the *dhoura*, a species of millet, a cane from six to seven feet high, which bears a grain similar to lentils, the farina of which composes one of the most common dishes among the inhabitants of all these countries; *sesame*, of whose excellent oil we have already spoken; *dates* in great quantities and of a superior quality; *cotton*, excellent *tobacco*, and the *mulberry tree*, which furnishes Syria with its principal product of *silk*.

Syria has also another natural source of wealth in its many *medicinal plants*, which form an important branch of commerce, and of which we have not yet made mention; as the *galbanum* plant, from which is extracted, by incisions made in the roots, a yellowish, juicy gum, which is much employed in medicine in the composition of certain ointments; the *scammony*, which is also a resin gum, extracted by incision from the root of a species of bindweed; the *storax*, a resin gum produced by a large shrub, and which is used both as a perfume and in medicine; and the *adraganth gum*, which flows naturally from certain small shrubs in these countries. It is employed in medicine, and is useful in the arts in giving more consistency to ribbons and laces, and in the application of certain delicate colors.

The *animals* present nothing remarkable. They consist of horses, camels, horned cattle, sheep, goats, and many jackals.

The *population*, all of the white race, and very inconsiderable in number, is composed of Turks, Arabs, Greeks, Jews, and Armenians; in the Lebanon exist two rival races, always at war; the Druses, idolaters or Mussulmans, and the Maronites, Catholic Christians placed under the protection of France. Syria is a country on the decline, where ignorance, superstition, and tyranny reign.

9. PLATEAU OF JUDEA. — Detached from the Anti-Lebanon and separated by the deep valley of the Jordan, are two chains of mountains, which, extending southerly towards the Red Sea, form the high country so celebrated under the names of *Palestine*, *Judea*, or the *Holy Land*.

The aspect of this country is extremely severe, mountainous,

and destitute of trees except in the valleys and gardens, where the vegetation is very fine.

The *climate* is temperate upon the heights, but generally hot elsewhere. In the deep valleys, where the days are very hot, the nights are cool, and refreshed by abundant dew, rendering it dangerous to venture out after sunset without a thick wrapper. There are only two *seasons*, summer and winter, which last is preceded by the *latter* and followed by the *former rains*, so often alluded to in the Bible.

The *vegetables* are the same as those of Syria. In these days, as in ancient times, the *olive* ranks first among all the trees of Palestine, which is probably its primitive country. Nowhere is it to be found so large or so aged; thus the ancient olive trees which are still to be seen in the garden of Gethsemane, near Jerusalem, are said to be as many as 25 feet in circumference, and appear so old that it is asserted, and not without some foundation, that they are the same which were the witnesses of the mysterious scene of our Saviour's agony. The *fig tree* grows as profusely as of old; the *vine* is rare, and there are but few *palm trees*; *cypresses* in abundance adorn the cemeteries and gardens.

The grains there cultivated are especially *barley*, *wheat*, and *millet*; *rice* flourishes only in a few moist places. In Palestine, also, the famous *sycamore* may be frequently met with, of the same species as that which Zaccheus climbed in order to see Jesus as he passed. This is a tree very precious in the East, both on account of its fruits, which possess nearly the same qualities as common figs, and for its vast shade, which is capable of sheltering a caravan of thirty travellers with their horses; the Orientals very often climb them, and ensconce themselves among the branches to smoke their pipes or indulge in conversation. As for its fruits, as soon as gathered they are replaced by others, and thus a tree yields as many as seven crops a year.

Another tree famed in the East is that from which the *Balm of Judea* or *Gilead* is extracted, and which thrives principally in the portion of the plateau situated east of the Jordan. This balm, which does not differ from that of Mecca, of which we have already spoken in connection with Arabia, is thought by the Mahometans to be possessed of marvellous properties. The tree,

according to their doctrine, sprang from the blood of men slain in a battle by Mahomet, and from it, as they affirm, immediately gushed a precious balm, of which the great prophet made use to resuscitate the dead. The balm, issuing from incisions made in the trunk or branches, is reserved for the nobles of Constantinople. On boiling the branches in water, an oily substance is seen to swim on the surface ; this is the balm of second quality, destined for the Turkish ladies, who make use of it in their toilet ; finally, a new decoction produces the *balsam of Mecca*, which is exported to Europe, but which is often counterfeited.

The *animals* are those of Syria ; few large cattle, horses, and camels, but many sheep, goats, asses, and mules, a few panthers, wolves, and jackals.

The *population*, wholly of the white race, is the same as that of Syria, consisting of Arabs and Turks, who are Mahometans, Jews, Greeks, and Armenians, and some Europeans, both Catholics and Protestants. The latter now have a church on Mount Zion at Jerusalem. All the portion east of Jordan, formerly covered with opulent cities, whose magnificent ruins are yet visible, is nearly deserted. The pillage and continual exactions of the Bedouin Arabs no longer suffer the peasants to cultivate the earth ; the small cities, even, are abandoned by degrees, and few travellers dare trust themselves in this gloomy region.



Bedouin Arabs.

10. PLATEAU OF NEDJED. — Adjoining the high country of which we have just treated is a plateau too little known to arrest our attention, but which occupies all the central part of Arabia; this is the *plateau of Nedjed*, wholly covered with deserts studded with fresh oases.

11. PLATEAU OF THE DECCAN. — To complete our review of all the high countries of Asia, there only remains to be mentioned the *plateau of the Deccan*, entirely isolated in the south of the peninsula of India, and which is formed by three chains of mountains, the *Vindhyan Mountains* at the north, the *Ghauts of Malabar* at the west, and the *Ghauts of Coromandel* at the east.

This plateau possesses all the productions characteristic of India. It is especially rich in its *precious stones*, among others in its *diamonds*, which have furnished the specimens most admired both in Europe and in the East. They are found in caves in the midst of a reddish earth, or in the sand of certain rivers. These diamonds are more pure, more sparkling, and harder than those of any other countries.

Among the *vegetables* of the Deccan should be specified a remarkable building wood, the *teak wood*, almost incorruptible, and especially sought for the building of ships; and the *areca palm*, whose fruit, of the size of a hen's egg, contains a kernel, which, sprinkled with lime and enveloped in a leaf of the plant called betel, is chewed by the Hindoos from morning till night; nor do they fail to offer it to every guest: the chewing of the betel is a passion common to both women and men, and they make as great a consumption of this plant as we do of tobacco. The bud which terminates the plant, and which is formed of the undeveloped and very tender leaves, is known by the name of the *cabbage palm*; it is eaten raw or cooked, and is very agreeable to the taste.

Among the vegetables serving for perfumes may be mentioned the *white sandal* and the *aloes*, trees whose fragrant wood is burned as perfume in the religious ceremonies of the Hindoos and Mahometans. The *benjamin*, a tree which resembles the fir, produces also a gum, esteemed one of the choicest incenses among the Catholic population of Europe, as well as among the Asiatic nations of which we have just spoken.

We must include among the most rich and precious productions of the Deccan its vegetables serving for *spices*, or for the seasoning of dishes. The *black pepper*, (of which the *white pepper* is made by removing its bark,) ranks first, and is exported throughout the world. The pepper is a small fruit



Pepper Plant.

which grows in clusters, like those of the currant, on a climbing plant called the *pepper plant*. Each of these clusters contains from 20 to 30 grains of pepper. The pepper is planted. It produces no fruit until at the age of three years, and ceases to bear at the end of twelve. Certain shrubs yield as many as 10 or 15 pounds in the first years. Every one is familiar with the hot and pungent character of this grain, of which we make so great a consumption. The *betel*, whose leaves, prepared with the areca nut, are, as we have said, chewed with delight by the Hindoos, is a species of pepper plant. The *cashoo*, which, both in Europe and America, is chewed by many, (especially smokers,) when prepared by the apothecaries in little silvered *pastils*, is the thickened juice of a species of acacia. Another Indian

spice is the *ginger*, a root of about the size of the thumb, of a sharp and very hot nature, which is employed in pharmacy and in the seasoning of food. Preserved in sugar, the ginger furnishes a delicious sweetmeat, and in summer a lively and refreshing beverage in made of it, called *ginger beer*.

Concerning the rice, cotton, and other products of the Deccan, we have spoken in connection with India.

The *animals* and *population* are also the same, and we will not recapitulate them.

SECT. 5. PLAINS OF ASIA.—Having considered the plateaus or high countries, we shall next direct our attention to the low plains, which are five in number, the first four of which are situated around the high plateau of Eastern Asia: *Hindustan*, on the south; *China*, on the east; *Siberia*, on the north; and *Toorkistan*, on the west. The fifth, which is the *Desert of Syria*, is located between the high country of Syria and the plateau of Iran.

1. HINDOSTAN AND BENGAL.—*Hindustan'*, whose eastern portion bears the name of *Bengal*, is a vast low plain, occupying all the north of India, between the Himalaya and the Vindhyan Mountains. With the exception of the western part, where there are some deserts, it resembles a *garden of prodigious fertility*. Picture to yourselves immense fields of *roses*, from which the *essence* is extracted by distillation, side by side with others covered with *poppies*, from which, as we have seen, the *opium* is obtained; and a little beyond, vast thickets of *cotton trees*, from the product of which the Hindoos have always been skilled in manufacturing those delicate muslins, which for a long time seemed inimitable to the Europeans. Elsewhere, as far as the eye can reach, extend fields of *rice*, plantations of *sugar cane*, or, immense fields of *indigo*—a small plant, which is cut several times a year with sickles, and which yields a beautiful blue color, the *indigo*, increased quantities of which are annually demanded by commerce. The plant, being cut, is placed in a vat, three quarters full of water, where it ferments and decomposes, turning the water blue; it is then passed into other vats, and a little lime being added, the indigo settles at the bottom, when it is collected and ready for commerce.

But, although the aspect of the plains of Bengal is magnificent, the climate is very trying to Europeans. The heat is oppressive during nearly the whole day. All nature is sometimes convulsed by fearful hurricanes, and various terrible diseases; the cholera and the elephantiasis (a shocking leprosy, which produces a singular swelling of the limbs) cause great ravages among the inhabitants.

In respect to *mineral* wealth, Bengal is no less richly endowed than the rest of India. It boasts, besides its ancient precious metals and diamonds, a mineral especially useful in our times — the *pit coal*; and another, which unfortunately derives its principal importance from the evil use to which it is converted, namely, *saltpetre*, a species of salt, which, with charcoal and sulphur, constitute the ingredients of *gunpowder*. Most of the English and American ships which trade with India take thence saltpetre by way of ballast; that is, as heavy matter required in the hold of vessels to steady them, and prevent them from becoming the sport of the winds.

The *vegetables* of Bengal have mostly been enumerated in connection with India, and we have only to mention, in addition, a new textile substance, which attracted much attention, at the London Exhibition, in 1852. This is the *jute*, a species of hemp, which flourishes in the plains of Bengal, and which possesses, in singular conjunction, the properties both of flax and of cotton; that is to say, the capacity of being combed in parallel threads, and that of being carded. Thus the jute can be reduced to filaments like silk, and to wool like cotton. It combines equally well with silk, wool, thread, and cotton; and the English hope to substitute this new substance for the cottons of the first quality, which they can only obtain from North America.

The *animals* and *population* of Bengal have already been described, in connection with India.

2. THE PLAIN OF CHINA. — *China* is generally a country of plains, especially in the portion which is included between its two great rivers; but it is a country of a very diversified aspect, intersected with mountains, rivers, and numerous canals. The whole is cultivated even to the summits of the mountains, on the sides of which the earth is retained by means of walls, and watered

by artificial engines. Gardens are even cultivated, formed of a small quantity of earth placed on rafts, which float over the rivers.

The *climate* is warm and temperate, which favors the cultivation of its extremely varied products.

The *vegetables* are, first, *rice*, which is the essential nourishment of the inhabitants; all the *cereals* and *fruits* of Europe and Asia; the *bamboo*, which renders immense services, and is used in the manufacture of all kinds of articles, and household utensils, and even for houses; the *cotton tree*, of which the Chinese possess, among others, a yellow species, the *nan-keen*, so called after one of their principal cities; and the *white mulberry*, whose leaves serve for the nourishment of the silk worm, that precious insect, of which the Chinese first learned to make use, in fabricating rich stuffs, from the delicate threads of which it forms its cocoon; for a long time they preserved the secret of these manufactures, which were then so expensive that a Roman emperor, Aurelian, on this account refused to purchase a silk robe for the empress, his wife. It was only about five hundred years after the birth of Christ, under the reign of another Roman emperor, named Justinian, that Greek missionaries, by bringing over from the Indies, in canes hollowed expressly for the purpose, a few eggs of the silk worm, made the Europeans acquainted with the secret of obtaining and employing the silk.

Another no less celebrated production, and which is wholly peculiar to China, is the *tea*, which has become in all countries an important article of commerce. The tea is a shrub, which rises to a height of from 4 to 6 feet; its leaves only are used, which are gathered twice a year, in the spring and in the autumn, when they begin to unfold. They are dried a little in the sun, then exposed on plates of hot iron, and afterwards rolled on mats with the palm of the hand. These operations are repeated many times, and when the tea, well dried, has thus been robbed of a sharp principle which it contains, it is closely packed in chests lined with sheets of lead, and then despatched to Europe or America. Nearly fifty varieties of tea are estimated in commerce, but they are always divided into two classes: the

black tea, which is the less stimulating, and the *green tea*. The name of *caravan tea* is also given to the fine qualities which are exported to us from the interior of the continent, and from Russia. The use of tea was introduced into Europe about two hundred years ago ; and the first French physician, who recommended it, called it the *divine herb*.



Tea Plant.

Another vegetable, as curious as it is useful, is the *tallow tree*, which somewhat resembles our cherry trees, and whose fruit is in the form of capsules, with three cells, each containing a seed covered with a very hard and white kind of tallow. The shells and seeds are ground together, boiled in a kettle, then

skimmed, and the fat, which floats on the surface, and when cold becomes hard, may be used in the manufacture of candles.

The *varnish tree*, or *badamier*, is a tree from which a gum is extracted by incision. The Chinese collect the gum while it is yet liquid, and use it in the composition of many varnishes, with which they polish even the walls of their houses; the articles varnished with it, and which are imported into this country, are known by the name of *lacker goods*.

In connection with the tallow tree, our attention is naturally directed to the *trees of wax*, or rather of the *wax insects*. The eggs, which have been carefully collected, are suspended on the branches of the tree in the spring. The insects, immediately after hatching, climb to the branches, nourish themselves with their gum, and emit a kind of saliva. This liquid adheres to the branches, and is transformed into a white fleshy substance, which is removed by scraping, and which constitutes the wax of the tree. After being dissolved and purified, it is employed in the manufacture of boxes. The insects, which were first white, and of about the size of a grain of rice, become red or violet colored, increase very much, and remain hanging from the branches in clusters, as if they were the fruits of the tree; it is after this that the females lay their eggs.

Among the other less curious but no less useful plants should be mentioned a species of mulberry, — the *paper mulberry*, — whose bark, prepared like hemp, yield a flax, of which cordage and also paper are made; and the *white nettle*, cultivated throughout China, whose bark furnishes, like the hemp, fibres, of which the Chinese manufacture very delicate cloth, which is very durable, and which has this peculiarity, that even when old it scatters no white down on the garments, like the linen, or hemp cloth.

Another product sought by commerce, in China, is the *anise seed*, or *badiam*, a fruit produced by a tree in this country, and found in a shell, in the form of a star. The anise seed is very much used in drugs, and is employed in the preparation of the table liquor which is sold under the name of *Bordeaux aniseed*.

Finally, it may be added, for the benefit of the florist, that China is the native soil of the *camellias*, *hydrangeas*, and *China*

asters, those beautiful flowers which are now naturalized in our countries.

The *animal kingdom* presents nothing remarkable. China possesses the horse, ox, and camel; and in the southern part tigers, leopards, monkeys, &c.

China abounds in divers *minerals* — gold, silver, mercury, iron, salt, &c. But the mineral substance for which it is most noted is the *kaolin*, or porcelain clay, a species of white and light clay, of which the Chinese have, from time immemorial, fabricated exquisite vases, which the Europeans have only recently learned to imitate with any success.

The *population* is of the Mongolian or yellow race. The Chinese have broad faces, flat noses, thick lips, long ears, small



Chinese.

eyes, obliquely placed, and inclining towards the nose; they shave their hair, with the exception of a tuft, which they wear in a braid behind their heads; their hands and feet are small; and, moreover, in the upper classes, the feet of the women are compressed, from their infancy until the age of fifteen years, to such a degree, that they remain very diminutive, but from this results a swelling of the ankle bone, which renders the gait heavy and uncertain; therefore the wealthy females scarcely ever go out of their houses. They paint their faces at the age of seven years. A man is allowed several wives. Many children are drowned, or inhumanly deserted from their birth; the father has always the right of life and death over his children, and that of selling

them as slaves. The Chinese are generally untruthful, treacherous, selfish, and easily bribed ; but they have the art of concealing all their vices under an exterior of extreme politeness. On the other hand, they are industrious and very skilful ; their civilization has, in many respects, far outstripped ours, but they have long since ceased to make any progress.



Feet of Chinese Women.

Their religion is generally the Booddhist idolatry ; the upper classes, only, adhere to the religion of the philosopher Confucius, which consists of little but a collection of moral precepts. Some Catholic missionaries established themselves in China, and at first had great success ; more recently, however, they have been cruelly persecuted ; but they still count quite a large number of disciples. Protestant missions are also laboring there, and have obtained encouraging success.

3. PLAIN OF SIBERIA. — *The plain of Siberia* is an immense country, which extends from Behring's Straits as far as the Ural Mountains, and from the plateau of Eastern Upper Asia even to the Arctic Ocean.

Its aspect, which has commonly, although erroneously, been represented as uniformly dreary, is extremely diversified. In the southern part, the traveller finds a mountainous country covered with vast forests, or carefully cultivated fields, in the midst of which rise the huts of the inhabitants, sometimes isolated, sometimes clustered in villages. Farther north extend vast marshy steppes, interspersed with small salt lakes without outlet ; here the forests become more rare, or degenerate into stunted trees. Still farther north, and all along the coasts of the

Arctic Ocean, one encounters only immense desert solitudes, usually veiled by icy mists, and covered with mosses and languishing plants, where the soil is always frozen at a certain depth, whilst in summer the surface is completely transformed by the melting of the snow into miry swamps, into which it is dangerous to venture. This desert is called the *moorland*, or *toundra*. The climate is not universally the same; it may, however, be said to be every where very cold. At the north the winter lasts nine or ten months, and during the three summer months, June, July, and August, the heat is powerful enough to develop quite a number of flowers, and to ripen a few small wild fruits. At the extreme north, the sun remains above the horizon 52 days, which makes one day of 1248 hours; but it rises to so little height that its influence is scarcely felt. In the southern portion, on the contrary, where the winter endures only 6 or 7 months, the climate is so mild that wheat may be raised there.

The *vegetables* of Siberia are of little note. The forests of the south consist of linden, alder, poplar, cedar, fir, and birch trees; a little barley, wheat, and some vegetables are cultivated. At the north, the women collect, in summer, many aromatic plants, roots which serve as food, and finally small berries, which, being immediately thrown into water, freeze, and are thus preserved for the winter. But in proportion, as in the greater part of Siberia, the vegetable kingdom is poor and meagre, the *animal kingdom* is rich and fruitful; thus affording another instance of that goodness and wisdom of the Creator, who, even in the least favored countries of the world, has taken care to provide, in one way or another, for the wants of all his children. The most precious gift which Providence has bestowed on these gloomy countries is the *reindeer*, a large animal of the stag species, with branching and jagged horns. The nomadics of the north utilize it in a hundred different ways. They attach it to light sledges, in which they traverse with extreme rapidity very great distances. The female yields milk of which they make butter and cheese; the flesh is palatable, and may easily be preserved with salt; of the skin, garments, harnesses, and saddles are made; of the tendons, twine and thread; bottles of the bladder, and various utensils of the horns and bones. The reindeer is easily maintained: a little

moss, which it can procure for itself, even in winter, by scraping and digging under the snow to a depth of several feet, composes almost its only nourishment. If this fails, it subsists on the bark of trees and the buds of the birches and firs.



Reindeer.

The wild reindeer, which are the principal object of the Siberian chase, are subject to regular emigrations, during which they are exposed to the shots of their enemies. Thus at the expiration of the summer, after having fattened themselves on fresh moss in the plains of the north, they hasten, at the first approach of cold, to regain the deep forests of the south, where they are obliged to seek shelter during the winter. They arrive, divided into bands of three or four hundred, which, all assembled, form a troop of many thousand reindeer. At the head of each detachment is a deer remarkable for its strength and size, and which seems to serve as guide to the rest. The hunters, who lie in wait for them concealed on the borders of the rivers, spring into their canoes, and surrounding these animals as they swim across, strike them with blows of the lance, and in a few moments slay a great number. Next to the reindeer, the most useful animal to the populations of the more northern countries is the *dog*. It is employed in drawing the sledges, (as we have mentioned in connection with Kamtchatka,) in conveying provisions and merchandise, and it usually aids its master in the chase. In summer they are attached to the boats which ascend the rivers, and it is wonderful to see with what dexterity they pause when it is necessary, and dart to the other side of the river, by swimming, when the course

which they are pursuing is obstructed by a rock. So precious is this animal to these tribes, that a woman, it is said, having, in an epidemic, lost all her dogs, with the exception of two, a male and female, resolved to save them by nourishing them with her own milk. She accomplished her strange resolution, and the two dogs thus nurtured produced a numerous offspring.

We must not forget the *horses* of Siberia. They are small, but covered with thick hair, and have an astonishing capacity for enduring the cold. Whatever may be the severity of the weather, they exist without shelter, laboriously seeking the turf buried beneath the snow. Notwithstanding this, they never lose their teeth, and are still in working condition at the age of thirty years.

Among the *animals*, the chase of which also offers a precious resource, should be named the *elk*, the largest of stags, remarkable for the very wide spreading horns which ornament its head. The neck of this animal is so short that it is obliged to spread and bend its fore legs when grazing; it feeds therefore more readily on foliage, and the buds and bark of trees, than upon grass. It delights especially in large forests, particularly in those containing swamps, in which it plunges and remains whole days during the summer, in order to escape the stings of gadflies.

Next rank the *fur-clad animals* already named, (in treating of Kamtchatka,) the black, blue, or silver foxes, martens, sables, various species of squirrels, especially the *minerer*, whose skin is so widely diffused by commerce, and *otters*, quadrupeds of about two feet in length, with thick fur, which is used in the hat trade, and is particularly in demand among the Chinese: this animal lives on the borders of rivers; it walks with difficulty, owing to the shortness of its legs, but it swims with surprising ease, and can remain a long time under water; it destroys many fish in the rivers and ponds where it establishes itself. Numerous flocks of swans, geese, and wild ducks arrive every spring, driven thither by the instinct which impels them to seek the most isolated places, in order to complete their moulting, and hatch their eggs in these desert solitudes, sheltered from the pursuit of the hunter.

But man is not the sole enemy that the above-mentioned animals have to encounter in these cold regions. To say nothing of

the brown and black bears, and the bands of wolves and foxes which traverse the plains, we should not omit to mention the *glutton*, the great enemy of the reindeer, an animal with short legs and of the size of a dog; it is so called on account of its extreme



voracity. Its fur, of a dark brown, with a black spot on the back, is much esteemed by the Russians, who prefer it indeed to any

other (except the ermine) for trimming bonnets and making cloaks. The glutton lives alone in a burrow, from which it issues during the night, to visit the traps of hunters and possess itself of the animals which are caught in them. It sometimes stations itself on a tree near one of the paths tracked by the reindeer, when he leaves the forest for the purpose of grazing in the plain; and as soon as the animal passes within its reach, it darts forward, springs upon his back, and there clings with such force that it is impossible for the deer to extricate himself from its clutch, until the horrible wound inflicted on his back exhausts him, and he falls dying on the turf. The glutton then begins to devour its prey, concealing the remnants for a future meal. At other times it is cunning enough to avail itself of the blue fox or isatis, as a purveyor; when it hears it in pursuit, it follows the sound of its voice, and arrives at the spot just as the hare is in the act of being taken. As soon as the glutton appears, the isatis, fearful of being devoured himself, takes to flight and abandons his prey. The glutton defends itself intrepidly against dogs and hunters, but as it has short legs and cannot run fast, it is easily overtaken and killed.

But the greatest torments of man and beast, at least during the summer season, are the *mosquitoes* or *gnats*. In July, when the air becomes clear, and one is prepared to enjoy the fine weather, thick swarms of these insects appear like clouds against the sky. The suffocating smoke of great heaps of moss and green wood, which are set on fire in order to drive them away, is the only preservative against these odious hosts. And yet these insects are not in every sense an evil. They render the greatest services to the inhabitants by forcing the reindeer to abandon, in the spring, the depths of the forests, to cross the *tundra*, and resort to the sea shore, where the air is colder, and where winds prevail which disperse the mosquitoes.

The *minerals* together with the furs, constitute the principal wealth of Siberia. We have already alluded, in connection with the Ural and Altai Mountains, to the ever-increasing quantities of gold, silver, platina, iron, and copper, which are found in these cold regions. Add to these metals a great number of precious

stones of different kinds; *diamonds*, in considerable quantities; *aqua-marines*, species of emeralds of a pale green, but less esteemed than others; and the *malachite*, a rich stone of the most beautiful green, in whose composition copper is combined, and which is capable of being polished and moulded into vases, cups, knife handles, &c. At the great Exhibition at London, there was displayed the entire furniture of a drawing room in malachite — tables, arm chairs, chimney piece, and doors.

Population. — With the exception of the Russians, who are the ruling power in this country, or who have been exiled thither as criminals condemned to work in the mines, the inhabitants of Siberia are generally of the Mongolian race, and are for the most part reduced to a state bordering on barbarity; many, however, have been baptized, and are considered Christians of the Russian church; but a great number are in reality only poor idolaters, worshipping fetishes in wood or stone, and trembling before their *schamans*, or sorcerers, whose mission it is to appease the genius of evil. These sorcerers wear a long robe of elk skin, adorned with little bells, and on their heads great horns, which are ornamented in the same manner. The more noise they make in walking, the greater is the respect which is paid to them. Almost all these populations are nomadic, living in tents or huts of bark, in the midst of revolting filth, subsisting on rancid meat, or dry and often tainted fish, and drinking with evident delight the fat of the seal and the oil of the whale. They are also passionately fond of tobacco, brandy, and tea, which they procure in exchange for their skins and furs.

4. THE PLAIN OF TOORKISTAN. — West of Eastern Upper Asia is found the low plain of *Toorkistan*, situated between the Bolor Mountains and the Caspian Sea, and between the plateaus of Iran and Siberia.

The *aspect* of this country is mountainous at the south-east, where are found delightful valleys; every where else it presents a vast plain, or rather a sandy desert, destitute of trees, but forming towards the south steppes, where in certain places the grass exceeds the height of a man, while elsewhere the desert is covered with salt or interrupted by salt lakes. Here and there,

however, smiling oases meet the eye, and on the borders of rivers fertile fields, as also very beautiful gardens watered with the greatest care.

The *climate* is fine and salubrious at the south-east, but in the plains it is hot and arid in summer, and excessively cold in winter, owing to the winds which blow directly from the icy plains of Siberia.

The *vegetables* offer no production with which we are not already acquainted. They consist of grains, rice, cotton, wine, and excellent fruits.

The *animals*, likewise, are all familiar to us. They are very fine horses, camels, large-tailed sheep; also panthers, hyenas, jackals, and bears.

The *minerals* are, on the contrary, the prominent production of Touran. There are found considerable quantities of rubies, among others the *balass ruby*, of a pale rose or lilac color, and the *spinel ruby*, of a clear and brilliant red, almost as much esteemed as the Oriental ruby; *lapis lazuli*, or *azure stone*, which furnishes a magnificent blue color, known by the name of *ultra-marine blue*, but which presents the disadvantage of being excessively dear; and *turquoises*, beautiful precious stones of a pale blue, which are very much prized by the Persians, among whom are found the principal mines of this substance. In Touran are also found many salt mines.

The *population* is composed of men of the white race, and who belong to one of the branches of the Turkish family. They are all Mahometans; the greater part passionately fond of war and plunder, and reducing each other to slavery in the course of their military expeditions. Those who inhabit the cities labor very skilfully in the silk and leather trades. The favorite food of the nomadics is the flesh of their horses, and they drink the milk of the mares; they let it become sour, in order that it may acquire an acid, vinous taste, to which they are very partial; by fermentation they obtain from it the *koumiss*, an intoxicating liquor, of which the chiefs are passionately fond.

5. THE PLAIN OR DESERT OF SYRIA.—The *Desert of Syria* is another vast low plain, situated between the plateaus of Iran and Armenia, the high countries of Syria and Judea, and

the plateau of Nedj'ed. The name of *Mesopotamia* (which signifies, in Greek, *between the rivers*) is given to the portion of the Desert of Syria which lies between the two celebrated rivers known by the names of the Tigris and the Euphra'tes.

The Desert of Syria presents generally, throughout, the aspect of a plain as smooth as the sea, and of a desolate uniformity. Towards the north it is, however, a little broken by sand hills, covered with meagre pasturage; at the south are found vast marshes and salt lakes.

The air is generally pure and dry, but in many places the miasm, caused by the stagnant waters, is greatly to be dreaded; and in summer the air in these bare and sandy plains becomes actually scorching. For example, at Bassora, a city situated on the Euphrates, strangers are obliged at this season to confine themselves within doors from 9 o'clock until 4, under penalty of receiving a fatal sunstroke. The heat causes the furniture to crack, and iron, glass, and all substances which are usually cold to the touch, now impart a burning sensation. One is obliged to retreat into a gloomy cellar, where his time would be passed in perfect inaction, were it not necessary to combat the mosquitos, who also seek shelter there. A very tall kind of chimney establishes a current of air in the vault, where visitors, even, are entertained.

The *vegetation* is that of the desert: saline plants are scattered at wide intervals over the burning sands. The *wormwood*, a plant from which, in Switzerland, an excellent green liquid is obtained, used by epicures and invalids to stimulate the appetite, spreads in this desert, like the heath in Europe, over immense spaces, from whence it banishes every other plant. *Licorice* is also quite common there, and an infusion of the root of this plant is employed for correcting the taste of the water, generally brackish and bitter. These sterile plains were, however, once covered with opulent cities, and a numerous population, and would yet be fertile if pains were taken to cultivate, and especially to irrigate, them. Here and there, on the borders of rivers, may be seen excellent tillage, flocks, towns, and villages, with gardens and clusters of palm trees. Nevertheless, the general character of the country plains is that of desolate solitudes, over which yet

seem to hang the judgments of God, denounced by the prophets upon the proud cities of Nineveh and Babylon.

The *animals* are also those of the desert. Flocks of the graceful gazelle traverse these plains, where formerly wandered herds of wild asses. Concealed in the rushes along the rivers, the lion lies in wait for these animals; but when his unsatisfied hunger is disappointed of its prey, he becomes furious, and his terrible roarings resound like thunder from solitude to solitude. Horses, camels, oxen, sheep, and goats are the principal animals useful to man.

The *population*, few in number, is composed of men of different races.

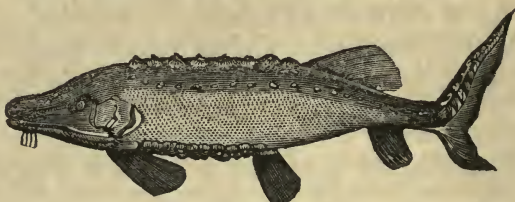
At the north are tribes of *Turcomans*, whose villages, and tents of black camel's hair cloth, are scattered far and wide. The *Yezidis*, the wildest of all the Kurds, wander in the north-eastern plains. They acknowledge God like the Mahometans, worship the sun like the Sabians of Persia, revere the Christian priests, and pay especial homage to the devil, Ahriman, to whom they present offerings in a profound cavern. They are the terror of all the neighboring populations. At the south the country is occupied only by Arabs, who are nearly independent, and who subsist on the dates of their gardens and the product of their flocks.

SECT. 6. PRINCIPAL LAKES OF ASIA.—Asia contains a vast number of lakes, of which we shall notice only the best known and most celebrated. Some are lakes of salt and others of fresh water.

1. THE CASPIAN LAKE, OR SEA.—Among the former class we will first name the largest of all lakes, the *Caspian Sea*, an immense basin, into which empty the waters of many great streams and rivers, and from which no current of water can escape into any other sea, for the obvious reason that this basin is much below the level of the ocean.

The waters of this lake are not very salt, but they are more bitter than those of other seas, on account of the numerous beds of naphtha which are found towards its southern extremity, and of which we have spoken in connection with Caucasus. Navigation is dangerous there, on account of the violent winds from the east and west. The Caspian Sea nourishes a great abun-

dance of fish ; many varieties of seals, so numerous that they furnish the food of some of the bordering populations ; salmon, pike, and many other kinds, less known. But the principal production of the Caspian Sea is the *sturgeon*, which gives rise every



Sturgeon.

year to a considerable fishery. There are many species of this fish ; the *small sturgeon*, or *sterlet*, which is the most famed, and which the prodigious extravagance of the Russian tables has, by a very expensive process, introduced alive from Astrachan into St. Petersburg ; the *ordinary sturgeon*, whose flesh bears some analogy to veal ; and finally the *great sturgeon*, the flesh of which is far less valuable. This last is an enormous fish, which attains 12 and even 15 feet in length, and weighs as many as 1000 or 1200 pounds.

The sturgeon destroys many small fish : it is to the Caspian Sea what the shark is to the ocean. Its mouth, placed under the nose, is, however, small and unprovided with teeth. Enormous quantities of them are taken ; when in the spring they ascend the rivers to spawn, many thousands are sometimes caught in a day ; they are dried or salted ; and of the eggs which are found in the female, the caviare is prepared. The consumption of this dish is so considerable, that its preparation is an important branch of industry and commerce in Russia. It is stated that one only of these fish may furnish 120 pounds of it. The best, designed to be eaten fresh, is that which is prepared by cleansing the eggs in a sieve, and letting them remain an hour in the brine, (or salt water,) after which they are drained through another sieve, and then packed in small casks. The other modes of preparation consist in salting the eggs, and afterwards having them thoroughly

dried. It is of the natatory bladder of the great sturgeon that the *isinglass* is made, so useful in the arts. That which we meet with in commerce is, the greater part of it, furnished by the Russians, who procure it from the environs of the Caspian Sea, where it is almost exclusively prepared. It has been calculated that 1000 large sturgeons yield about 300 pounds of isinglass; the sterlets produce only a third of this quantity. Isinglass is used for a variety of purposes; for making mouth glue, for the composition of jellies, for clarifying wine, and finally for giving adhesiveness to court plaster.

2. THE ARAL LAKE. — East of the Caspian Sea is situated another important lake, the *Aral Lake*. Its shores are covered, like those of the Caspian Sea, with rushes; it contains also many small islands, and produces sturgeons and seals. Neither has the Aral Lake any visible outlet. It forms, with the Caspian Sea, a vast basin, sunk very much below the level of the ocean, strewn with marine shells, fish, and saline plants. The two lakes are now separated from each other by a space of about four leagues of quite elevated sandy plains; but they are known to have been united in ancient times, and their waters seem to be gradually abating. The Aral Lake freezes almost every winter. This lake, long unimportant, on account of the vast solitudes which border it, begins, as likewise the Caspian Sea, to be covered with Russian steamboats.

3. LAKES VAN AND OOROOMEE'YAH. — The *Van* and *Ooroomee'yah Lakes* are both in the plateau of Armenia. The former abounds in fish, a considerable commerce of which is carried on in the neighboring provinces. The water of this lake is so alkaline, owing to the soda which it holds in solution, that the people make use of it for the manufacture of soap. The Ooroomee'yah Lake contains salt sufficiently pure to be used in cooking; its waters are, together with those of the Dead Sea, the saltiest of any which are known; and they are so heavy, that it has been said that a man can sink no lower than his shoulders in them. They contain, moreover, no fish.

4. THE LAKE ASPHALTITE, OR DEAD SEA. — The lake which has borne the names of *Sea of Sodom*, *Dead Sea*, and *Lake Asphaltite*, is one of the most celebrated in the world. It

is situated south-east of the mountains of Judea, of which we have previously spoken. It is nearly oval in form, with a small peninsula in the southern portion of it. It is much farther below the level of the ocean than the Caspian Sea, and a great part of it is surrounded by high, barren mountains. An intense heat reigns there, under the influence of which the waters conveyed there by the Jordan and various other rivers evaporate rapidly, forming over the sea a thick mist, which is only dissipated by the sun's rays; consequently the basin of this lake needs no outlet.

The bed of the lake consists of two entirely distinct parts; that at the north being very deep, the other less considerable, and so shallow, that it is asserted that, when in summer the water is low, the neighboring Arabs can cross by a ford, from the small peninsula at the south-east, to the western bank. Therefore learned men believe that this portion of the plain was buried beneath the waters until the period of the terrible overthrow recorded in the Scriptures, and which occasioned the destruction of Sodom, Gomorrah, Admah, Zeboim, and Zoar. For, say travellers who have recently visited these places, "It is impossible not to recognize the terrible traces of divine wrath upon all the western bank of the Dead Sea, and upon a portion of the eastern bank. In sight of this scorched soil, of the ashes which cover the plain of Sabkah, south of this lake, — in view of the mountain of salt there formed, of the lavas and masses of bitumen which are encountered, — one could not call in question the truth of what Moses relates on the subject of that rain of brimstone and fire, accompanied, undoubtedly, by earthquakes and volcanic eruptions, which reduced to desolation a country hitherto as fair as that of Egypt, or the earthly paradise." (Gen. xiii. 10, 19, 24.) The volcanic mountains of this vicinity are no longer subject to eruptions, which is also the case with the ancient volcanoes of Auvergne; but in neither instance are we led to doubt the terrible nature of their former eruptions. Moreover, French travellers affirm that, south of the Dead Sea, the very remains of four of the five cursed cities destroyed by fire may be recognized; their identity, however, still admits of doubt.

Many fables are related on the subject of the waters of the

Dead Sea. It has been said that they were black and muddy ; that there escaped from them vapors fatal to men and animals, and even to the birds which merely flew over their surface ; that they were so dense that men, swimming, could not sink in them ; and, finally, that no vegetation could be found on their borders, except those celebrated *apples of Sodom*, which, from their color, appear to be tempting fruits, but which, as soon as touched by the hand, dissolve into smoke and ashes.

Modern travellers, on the contrary, maintain that the waters of the Dead Sea are as blue, as clear, and as transparent as those of any other lake, except that in some places masses of liquid bitumen may be perceived floating on the surface. It neither emits fire nor smoke, but during the night the waters are completely phosphorescent, and the waves, breaking against the shore, shed a sepulchral light over the brambles and fragments of rock dispersed along the borders. The fish which the Jordan nourishes could not exist in the salt waters of the Dead Sea, (which, in this respect, well merits its name ;) but it has never been proved that the fish of the ocean would inevitably perish there. Ducks and other aquatic birds frequent this sea, and the equipment of two small American ships, transported from the Mediterranean Sea into the Jordan and the Dead Sea, remained during three weeks upon the latter without material detriment to the health of the robust sailors. But the waters are very sharp and corrosive, under the influence of the excessive heat ; the slightest scratch festered and ulcerated, and the sailors complained bitterly of their wounds whenever they came in contact with the water of this sea. This water is so impregnated with saline and bituminous substances, that it is much more dense than that of the ocean ; a person can therefore swim in it with more ease. The sailors above mentioned could float upon it so comfortably that they might, without the least inconvenience, “there pluck a chicken or read a daily.” But one pays a severe penalty for the pleasure of swimming with so much facility. He emerges from the bath, his body entirely covered with a very uncomfortable, oily substance, which occasions painful irritation ; should he remain in it many hours in succession, he would be bereft of his entire skin. When these sailors wet their hands in rowing, a kind of moss or

froth accumulated upon them, and their skin became stiff and raw. In certain places, the borders of the sea are so incrustated with salt, that they look as if whitened by lime; elsewhere, when the waters are high, shrubs may be seen whose stalks partly stretch themselves out in the water, and whose branches, impregnated with salt, sparkle in the rays of the sun, like trees when they are covered with hoar frost.

With regard to the vegetation, it is true that the general character of the borders of the Dead Sea is that of aridity and desolation. Nevertheless, here and there, wherever a small stream is to be met with, may be seen tufts of beautiful verdure, thick reeds which rise 20 or 25 feet high, and even large trees, amid whose foliage sport the most charming birds, among others the *woodpecker of the Indies*, with its wings spotted with flame color, gentle *turtle doves*, with the grayish violet breast, and many other denizens of the air. As for the *apples of Sodom*, they are the fruit of a perennial plant which grows to a height of 10 or 15 feet. This fruit, when ripe, resembles a large apple or orange, is of a yellow hue, and agreeable to the eye. Filled almost entirely with air, like a bladder, it bursts with a report as soon as pressed; there then escapes from it a little very fine white dust, and this dust being scattered, there remains a tuft of seeds which are very similar to the down of little birds. This plant is found also in Persia and Arabia.

5. LAKE OF TIBERIAS. — Among the numerous fresh water lakes of Asia should be mentioned, first of all, (although one of the smallest,) the *Lake of Gennesaret*, also called *Sea of Galilee*, or *Tiberias*, situated north-east of the mountains of Judea, and traversed by the Jordan. It is almost oval in form, from 15 to 21 miles in length and 9 in width; its waters are usually blue, calm, and transparent as ice. It is also very full of fish. When the mountains, by which this placid basin is encompassed, were covered with vegetation, this must have been a superb country: the Mahometans, also, regarded it as one of the four terrestrial paradises; but now almost all the cities or villages are in ruins, and there are no trees on the borders of the lake except a cluster of olives near the site of Capernaum, and a few palm trees, which bow their plumed heads over the terraced roofs of the half-ruined

city of Tiberias. A throng of touching recollections associate themselves, in the Christian's mind, with the name of this celebrated lake. It was almost entirely upon its borders that Jesus passed the three years of his ministry; it was there that he selected his apostles from among the poor fishermen — there that he healed so many diseases, and preached to the enthusiastic multitudes, who, on one occasion, desired to make him king; it was upon its waters that he so often sailed, and that by a word he stilled one of those hurricanes, which, suddenly bursting from one of the gorges of the neighboring mountains, violently broke loose upon the Sea of Galilee. Miraculous fisheries, multiplication of bread, prayers in isolated places among these mountains, menaces addressed to the cities remaining insensible to so many miracles, — how many are the striking events which impart an interest to this little corner of the earth, which for a few years was pressed by the feet of our beloved Saviour!

6. LAKE BAIKAL. — Another fresh water lake, whose extent entitles it to a brief mention, is the *Baikal Lake*, which the Russians and Chinese more appropriately designate by the name of *sea*, for the surface which it occupies is of no less extent than that of entire Switzerland.

It is situated at the south of Siberia, is of very elongated form, and surrounded by wild and picturesque mountains. This lake, frequently agitated by terrible tempests, is generally deep, but filled with islands, shoals, and shallows, which impede navigation.

It is very fruitful in fish. Sturgeons are found there, but the inhabitants principally subsist by the fishing and hunting of seals, which afford them a very considerable revenue, also augmented by the gathering of the sea sponges. It is moreover imprisoned in ice, every winter, during five months.

SECT. 7. RIVERS OF ASIA. — In proportion to its great extent, Asia possesses few rivers. Upon the plateaus immense spaces are completely destitute of running water, and no river presents a navigable path by which vessels can penetrate to the centre of the continent, on account of the cataracts and rapids, which intercept navigation at the foot of the plateaus.

1. It is our intention to designate the principal of these rivers, commencing with those of Siberia: the *Obe*, the *Yenise'i*, and the

Lena, which, rising among the mountains of Eastern Upper Asia, flow from east to west, and empty into the Arctic Ocean.

These three rivers are among the most important in Asia. They are navigable even before quitting the mountainous regions, and their course generally lies through perfectly smooth countries, slightly inclining towards the north. But it is scarcely possible to make these advantages useful: frozen during six months, these rivers traverse deserted plains which are swept during almost the whole year by the icy winds of the pole, and they finally empty into a sea obstructed by ice, where vessels dare not venture. Commerce and navigation cannot then acquire great activity upon the banks of these powerful water-courses.

But as if in compensation for this disadvantage, these rivers have, through God's bounty, been rendered the essential resource and maintenance of the unfortunate populations of these cold countries, whose soil resists all cultivation. They all abound in fish, which is the principal food of the inhabitants of the north of Siberia. It is estimated that at least three millions of herrings a year are required for the subsistence of a hundred families.

As soon as the spring approaches, nets are spread under the ice; but the first fish which are caught being very poor, they are cut open, dried, and reserved as food for the dogs; the inwards furnish a great quantity of oil. In the month of June the ice of the river breaks up, fish abound, and all the inhabitants are occupied in collecting provisions for the following year; the blocks of ice, however, often accumulate, causing inundations and other serious disasters. But as soon as the rivers have resumed their uninterrupted course, the great fishery commences, upon which the life and well being of the people principally depend. The month of September is sometimes extraordinarily fruitful. It is not then uncommon to see the fishermen take in a single net as many as 40,000 herrings within the space of three or four days. After the fish have been cut open, and their bones removed, they are dried and smoked, in order to preserve them; but the upper part is separated and dried by itself, being considered the most delicate: it is afterwards pounded in a mortar with a little fat, and the mixture packed away in jars for winter use.

Three other rivers of Asia empty into the Pacific ocean — the *Amoor*, the *Hoang'-ho*, and the *Yang'-tse-Kiang'*.

2. The *Amoor*, or *Saghalien*, is a great river which descends from the plateau of Mongolia into that of Mantchooria, and afterwards empties into the Sea of Okhotsk. It is covered with ice in winter, notwithstanding its extreme rapidity: it is only imperfectly known, but appears to be bordered with thick forests, and contains many fish, otters, and beavers. Neither the beavers



Beaver.

of Europe nor Siberia are possessed of the characteristics attributed to those of North America. The former neither construct habitations nor dams in the rivers, as is related of those in America, but live in burrows dug on the borders of streams, where they deposit for the winter a store of bark, buds, and tender wood, which constitute their ordinary nourishment. They seem, indeed, to be deficient in intelligence.

The beaver is an amphibious animal of the size of the badger. Its head is rounded, its ears short, and its hind feet webbed, which gives it great facility in swimming; its tail, thick, flat, and covered with scales, serves it for a rudder. Its hair, usually black or brown, is very rough; but underneath it presents a fine and compact fur, impervious to water, and very much in demand for the manufacture of caps. Beavers subsist on the bark of trees and on fish, which they dexterously seize by diving. They are excellent swimmers, but on land have a clumsy gait, and run very

badly. Although extremely shy they may be easily tamed. It is not rare to see them, in France, in a domestic state.

On the borders of the River Amoor, and in Siberia, the beaver hunt is practised by means of snares or traps, which are spread under the water, surmounted by a slender willow twig, besmeared with a substance whose odor attracts these animals. They are hunted rather for the sake of their fur, which is highly esteemed in the hat trade, than for their flesh, the latter being very unpalatable. But one object of this chase is, to procure a fat and odoriferous substance contained in two pouches which the beavers have under the body, and which, under the name of *castoreum*, was formerly much used in medicine as a stimulant.

3. The *Hoang'-ho*, or Yellow River, owes its name to the sand which it sweeps in vast quantities from the steppes of Eastern Upper Asia, conducting it to the sea in such abundance that the waters are dyed yellow by it for a great distance; from this circumstance it has received the name of *Yellow Sea*. This river is very rapid; in the lower part of its course it is enclosed by dikes, but in the great freshets it overthrows or surmounts them, submerging fields and villages, and causing great ravages. Like all the other rivers of China, the above contains abundance of fish, and the Chinese, whom we have already characterized as a very industrious people, do not fail to avail themselves of this resource. They possess the art, for example, of taming and training *otters* and *cormorants* for the fishery. The otters are held in leash by means of a chain and collar, in order that they may not escape too far, and as soon as they espy the fish under water, they dive, seize, and bring it to their master. A well trained otter is valued in China at \$100. As for the *cormorants*, which are much less highly prized, the Chinese fishermen are in the habit of taking with them, on a bamboo raft, ten or twelve of these birds, in a famished condition. One or two of them are allowed to dive at a time, and soon reappear holding in their hooked beak the fish, which they lay submissively at the feet of the fisherman. If the bird loiters and neglects its task, the master, armed with a long bamboo pole, agitates the water around him by way of reprimand, and immediately, like a heedless pupil whom the teacher calls to order, the cormorant returns to its duties. A ring is always

placed around its neck to prevent it from swallowing the fish. The cormorants are only employed in the fishery from the month of October to that of May. Their owners carry them to the water side every day, and there keep them from about ten o'clock in the morning until five in the afternoon, but do not suffer them to fish: this is done to whet their appetites. It is at night, especially, by the light of their charming little colored lanterns, that the Chinese carry on this fishery with the cormorant, which then presents a most picturesque spectacle.

4. The *Yang'-tse-Kiang'*, or *Blue River*, commonly called the *Kiang'*, or *River par excellence*, is the largest watercourse in China. It issues from the same plateaus as the Yellow River, afterwards diverges widely from it, directing its course south-easterly, and then again approaches before emptying its blue waters into the great ocean. It often inundates the plain which it fertilizes, traverses great lakes, receives an infinite number of rivers, and acquires considerable depth. "The ocean is without limits, and the Kiang without bottom," say the Chinese. In the lower part of its course, it averages from 9 to 15 miles in breadth, and it is often impossible to perceive the two banks at the same time.

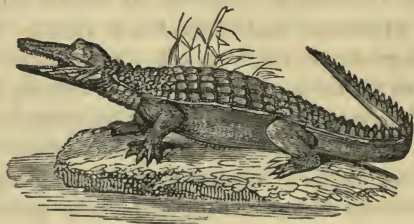
The Kiang is capable of receiving the largest ships, and supplies a great number of canals with water, among others the celebrated *Imperial Canal*, the longest in the whole world. We can form no idea of the immense number of commercial vessels towed one after another over this river. The whole length of the Kiang is bordered with them; and among this multitude of ships which follow each other in single file, it is necessary for each to preserve its rank from those who would usurp it, under penalty, once out of the line, of not being suffered to reënter it for a month or more. Hence quarrels and clamorous disputes are constantly arising.

But what surprises one most, on the Kiang, are enormous rafts formed of building and fire wood, on which live and float a population of sufficient size to constitute a kind of village. This village of cabins is rudely constructed of the very wood which is undergoing the process of transportation; here are found people of every calling — butchers, bakers, fishmongers, rice, fruit, and

liquor merchants. Some of these rafts are said to be more than a quarter of a league in length, and the cabins are so arranged as to form a street. In order to propel them, anchors, carried in advance by the aid of boats, are cast into the river, and by means of the cables which are attached to them, the people on the raft slowly and patiently progress towards their destination. As soon as this is reached, the village and raft are taken to pieces and sold.

5. Four rivers descend from the plateau of Thibet, or the valleys of Sinechan, traverse Indo China from north to south, and empty into the Indian Ocean; the two first the *May-Kiang* and the *Menam*, east of the peninsula of Malacca, and the two latter the *Thaleain* and the *Irrawaddy*, west of this peninsula. Each of these rivers inundates, during the rainy season, the low plain which it waters, and this moisture is favorable to the cultivation of rice, which is the principal sustenance of the inhabitants; it is sometimes so abundant in the granaries, and at so low a price, that the new crop is suffered to dry up, not being considered worth the trouble of harvesting.

All these rivers produce a great number of crocodiles, which are likewise found in all the rivers of the south of Asia. The



Crocodile.

gavial, or *crocodile of the Ganges*, is a huge species of lizard, twelve feet in length, as large as a man, and covered with scales so hard that a musket ball cannot penetrate them. They often seize and devour persons who come to the river side to bathe or draw water. On land they are little to be feared, as they move slowly, and have much difficulty in changing their course; consequently one can easily avoid them by abruptly varying his own.

The females deposit their eggs in five or six hiding-places, which they cover over with mud and sand, leaving it for the sun to hatch them; but very few of these little crocodiles escape the voracity of the males, or that of large fish and certain aquatic birds. If it were not for all these causes combined, the rivers would soon be encumbered with these dangerous animals. The marshes bordering on these rivers also abound in serpents. If these reptiles happen to be surprised by an inundation, nothing



Serpent.

more hideous can be conceived than the spectacle presented by swarms of them writhing among the branches of the great trees on which they have sought a refuge from the waters. These rivers are too imperfectly known to enable us to enter into more particular details.

6. The *Ganges*, one of the most celebrated rivers in Asia, descends from the southern declivities of the Himalaya, receives the rivers of Hindostan and Bengal, and empties into the sea through eight great mouths, generally obstructed at the entrance by sand, driven thither by the south winds, with the exception of the *Hoogly*, the most western branch, which, by the aid of experienced pilots, can always be navigated, and which is habitually covered with multitudes of vessels bound for Calcutta, the capital of India. Between these different branches of the river extend flat and marshy islands, covered with impenetrable forests, known by the name of *Sunderbunds*. These forests, which are the retreat of tigers and other wild beasts, are uninhabitable on account of their insalubrity. The *Ganges* has regular inundations, which fertilize the rich country that it waters. Towards the end of July, all the low portions of Bengal, bordering on the river, are inundated, and form a sheet of water more than 30 leagues in breadth. The houses and trees only appear above the surface of the waters.

The Ganges is sacred in the eyes of the Hindoos; in their courts of justice they swear by the waters of the Ganges, as Christians take oath on the Bible, and Mahometans on the Koran'; innumerable pilgrims resort to this river to perform their ablutions, and to draw the water, which they often convey to many hundreds of leagues distance: but there are some points more sacred than others; for instance, the confluences of the river. Morning and evening they assemble on the banks of the river, in order to practise all kinds of superstitious ceremonies. They carry the sick and dying to its borders to plunge them into the waves, or anoint them with the slime of the sanctifying river; after death the body is thrown into the water, where it floats with the tide until devoured by a crocodile, or until the current has cast it upon the bank, a prey to the vultures and jackals. These floating corpses are a very common spectacle on the rivers of Bengal.



Woman throwing her Child to the Crocodile.

But the most heart-rending sight is that of the unnatural parents who go thither to cast their children into the sacred river, in order to propitiate their cruel divinities. They walk up and

down on the borders of the Ganges, and while the innocent little creature clings confidingly to her who gave it life, the heartless mother, unloosing the hand which clasps her own, thrusts her infant into the midst of the waves, and calm and immovable as a statue, passively regards its struggles with death. It is no rare thing to see these fanatic mothers throw their children to the horrid crocodiles, which are even more abundant in this river than in those of Indo China, and feast on the hideous spectacle of these voracious animals contending for the palpitating limbs of the unfortunate little victim.

7. The *Indus*, (or the *Sindh*,) another great river of India, takes its source in Thibet, behind the lofty chain of the Himalaya, flows first north-easterly, then turns abruptly to the south, tumultuously traversing the wild and narrow gorges which separate the Himalaya from Hindoo Koosh, and afterwards enters vast plains, which it partly fertilizes by its inundations, finally emptying, through several mouths, into the Sea of Oman.

The Indus conveys to the sea a much more considerable body of water than the Ganges; but the latter, like the Chinese rivers, widens in some portions of its course like an immense lake, which gives it an imposing appearance that the Indus, almost always limited in its course, does not present. Moreover, as its tide does not rise as high, and as, instead of crossing fertile plains, like the Ganges, the Indus traverses countries almost entirely barren, arid, and thinly peopled, its navigation is far less extensive than that of the rich river by which Bengal diffuses through the whole world the wealth of her manifold and precious productions.

Without the Indus and its beneficent inundations, the whole country called *Sinde* would become a desert, like that which lies between this country and Hindostan, properly so called. In many places the sands stretch almost to the river, and are only separated from it by a narrow, fertile, and cultivated strip of land. Houses, constructed of coarse mats, on the very banks of the river, are elevated on platforms supported by strong posts from 12 to 15 feet high, and furnish a refuge during the inundations.

The soil of the *delta*, formed by the different branches of the river at its mouth, is quite rich, but poorly cultivated, and for the most part covered with dwarfish, although vigorous, vegetation;

forming impenetrable thickets, known in India by the name of *jungles*. The products of the fishery are considerable, and even yield the bordering populations valuable revenues.

8. The Persian Gulf receives the waters of the *Euphrates* and the *Tigris*; those two renowned rivers, which, rising in the plateau of Armenia, at the foot of Mount Ararat, infolded, in a manner, the cradle of humanity, and were silent witnesses of the fall of the first man; (Gen. ii. 14:) on their borders was erected the tower of Babel, and Nimrod and Ashur there laid the foundations of Babylon and Nineveh.

The clear and calm waters of the *Euphrates* are regarded by the Arabs as efficacious in the cure of almost every complaint; its banks are low, and as it is subject to periodical risings, its inundations often transform the plain of Babylon into a vast sea. Formerly, by surrounding the river with dikes, and conducting the water thence into canals, the ancient Babylonians succeeded in rendering these countries such as to rank among the most fertile in the world. Wheat, barley, and sesame, are affirmed to have grown wild there; the wheat yielded in the proportion of from 200 to 300 fold. These canals have become filled up, through the negligence of the inhabitants, and they are now obliged to force up the waters of the river by means of pulleys and oxen, in order to diffuse them into small canals, designed to irrigate the adjacent fields, which would otherwise remain a barren desert. The river first descends through steep gorges, forming a great number of falls, which render navigation impossible: after reaching the plain, it is bordered with forests of willows and tamarisks; below commence fixed habitations and cultivated fields, with numerous herds of goats, sheep, and oxen.

The *Tigris*, on the contrary, which owes its name to the impetuosity of its waters, rolls its muddy waves between steep and wooded banks. The *Euphrates*, in spite of some *rapids*, (or small waterfalls,) and a few sand banks, has been ascended by steamboats as far as the foot of the Armenian Mountains, but the *Tigris* is scarcely navigable at all. It is seldom crossed or descended, except with *kibes*—a kind of rafts, sustained by leather bottles, of sheep or goat skins, carefully sewed and inflated with

air. These bottles can support enormous weights. A raft of 40 bottles is capable of transporting a piece of heavy artillery, with five artillery men ; horses are often made to mount them, but it is more common to attach them behind, and they follow by swimming. The raft is covered with a bed of leaves, on which mats or carpets are spread for travellers ; in the descent of the river, the rapidity of the current renders the use of oars unnecessary ; they are only employed in steering and avoiding dangerous whirlpools ; moreover, if the boat chances to be struck, and to sink to a certain depth, it immediately rights itself, and no danger ensues. After having thus descended the river, the frame of the raft is sold to advantage in the plain of Mesopotamia, where wood is very rare. A single horse or mule suffices to transport the skins to their former place of destination.

The Euphrates and the Tigris unite a little above the city of Bassora, but their waters flow a long time in the same bed without blending. They then bear the name of *Shat-el-Arab*, (River of the Arabs,) and traverse a marshy country, where the navigator can scarcely discern the bed of the river.

9. The *Oxus* and the *Jaxartes*, like the two preceding, and those of China, are twin rivers, which rise in the same mountains and flow alike into the Aral Sea. In the steppes, of which, as has been remarked, the plain of Toorkistan is almost exclusively composed, there are no signs of industry ; not a town nor village is to be found ; but in the valleys formed by these two rivers, one discovers thrifty towns of considerable size, and a fertile soil, where agriculture has effected wonders. A number of canals, supplied with water by the Oxus and Jaxartes, divide the country into numerous small islands ; some of which are transformed into gardens, producing excellent fruits — apples, peaches, apricots, figs, almonds, pomegranates, and pistachios ; others, into fields of buckwheat, wheat, and even cotton ; and, finally, others converted into rich pastures, nourishing fine races of sheep, oxen, and horses, as likewise camels and goats. Unfortunately, the inroads and depredations of warlike tribes unceasingly menace the prosperity of the industrious populations, who devote themselves to agriculture.

10. In conclusion, we must say a few words of a river much smaller than the preceding, but far more widely known, viz., the *Jordan*, whose name so often recurs in Bible history, from the period when Joshua miraculously crossed it, at the head of his people, marching to the conquest of the Promised Land, to the time when John the Baptist, Christ, and his apostles there baptized the repentant multitudes, who flocked to them from all quarters.

The *Jordan* takes its rise in a deep grotto at the foot of the Anti-Lebanon, and after receiving the waters of two other rivers, traverses the small marshy *Lake Merom*,—on whose borders Joshua vanquished the kings of the Northern Canaanites, (Josh. xi.)—and enters the Lake of Gennesaret. Thence its waters issue clear and transparent; but they are soon rendered turbulent by the falls or numerous rapids which interrupt the course of this small river. Americans, who have descended the *Jordan* in copper boats, (alone capable of resisting the violent and multifarious shocks attending this navigation,) have counted 27 of these falls, all of which are more or less dangerous. Moreover, the river makes so many windings that the passage from one lake to the other is three times more circuitous by water than by land.

The *Jordan* winds through a vast and deep plain, generally arid during the dry season, destitute of trees, and even of verdure, but which might be rendered fertile by cultivation, and by conducting into it the waters of the *Jordan* for purposes of irrigation. It is now insalubrious in summer, on account of the excessive heat which reigns there, and which obliges the mountain Bedouins to abandon it as soon as they have sown their fields or gathered in their harvests.

Lower yet, at the bottom of a ravine, often a quarter of a league in breadth, roll the rapid and yellow waters of the river. This little valley, flourishing in perpetual verdure, forms a striking contrast to the aridity of the surrounding plains. The river almost disappears from view beneath a thicket of willows, poplars, tamarisks, aspens, and gigantic reeds, and the scenery is enlivened by the songs of numerous birds and the harmonious murmur of the waters. The river flows into the Dead Sea.

SECT. 8. PRINCIPAL ISLANDS OF ASIA. — Islands are detached portions of land, separated from the neighboring continents by arms of the sea of greater or less extent, and generally tend greatly to facilitate navigation and commerce between different parts of the world. For example, it was by means of the chain of islands which are found at the north-east and south-east of Asia, that the first families of men, proceeding from Asia at an epoch when the art of navigation was almost unknown, became distributed among the remotest countries of America and Oceanica, carrying with them the first elements of civilization and the arts. Islands have, in all ages, rendered very great services to man, and it is an inestimable advantage to a continent to be surrounded by them.

Asia possesses a great number of islands and groups of islands; but we shall here specify only those whose natural features present remarkable points of interest.

1. In the Arctic Ocean, Asia has only the cluster of the *islands of New Siberia*, near the mouth of the Lena; these are covered with snow and ice during the whole year, with the exception of a short summer of six weeks or two months, during which the sun never sets. The vegetation consists only of mosses and a few shrubs, which creep on the surface of the earth; and yet considerable forests of petrified wood are found buried beneath the soil, which, added to the discovery of numerous bones of elephants and rhinoceroses, seem to indicate that a milder climate formerly developed life and fertility in these gloomy regions, now almost always congealed with frost.

Incredible quantities of *fossil bones* have been discovered in the marshes of Siberia, on the sea shore, and in these islands. They here form in the earth, in certain places, actual mounds; from which circumstance these islands have been surnamed *the islands of bones*.

Towards the close of the last century, the body of an elephant, in a perfect state of preservation, was discovered among the ice upon the banks of the Lena. It was difficult to conceive by what means this bulky animal, which is now found in very warm climates, could have been transported into these regions. But

on observing that this elephant was clothed with a long mane and abundant hair, very similar to wool, and especially after discovering a rhinoceros in a similar state of preservation, likewise provided with long hair, men arrived at the conclusion that these animals were designed by nature to inhabit these cold countries, and that they beheld before them the last remains of a species now completely extinct. However that may be, the variety of elephants of which the most remains were found, and which appears to have principally inhabited the north of Asia, is the *mammoth*. It was about 15 feet in height; constituted for the temperate or cold countries, it was furnished, like the above-mentioned animals, with long hair; a long mane enveloped its neck, its teeth often exceeded 12 feet in length, their ivory equaling in whiteness and delicacy that of the elephant, but surpassing it in weight and durability. From the abundance of its bones the Tartars have conceived the singular idea that this animal lives in the earth, and dies as soon as it sees the light; thus it seems to have derived its name from the Tartar word *mamma*, which signifies *earth*.

These islands are uninhabited, except in summer, when hunters visit them in pursuit of white bears and foxes, or to collect on the shore the bones, and especially the ivory, washed up by the ocean.

2. In the Pacific Ocean we encounter, first, the *Koorile Islands*, which seem to be a continuation of the mountains of Kamtchatka. These mountainous and volcanic islands, of a damp and very severe climate, are of little importance, and thinly inhabited. The *Kooriles*, who call themselves *Ainos*, (men,) and also inhabit the great adjoining island, *Tarakai*, are men of tall stature, peaceable, and mild, — subsisting by hunting and fishing, — remarkable for their very heavy, black beard, and often cited as possessing more hairy bodies than men of other races.

3. South of the preceding are the *Islands of Japan*, which are among the most important and celebrated in Asia. The four principal are *Yes'so*, *Nippon*', *Sikoke*, and *Kioo'-sioo'*.

The *aspect* of the country is gloomy and very mountainous; many peaks are crowned with perpetual snow; others contain terrible volcanoes, whose eruptions often cause earthquakes;

elsewhere chains of mountains, apparently struck with eternal sterility, suggest the idea of a desolate and famished country. But, on a nearer approach, one discovers that the Japanese, with incredible industry and pains, cultivate the surface of the most rugged mountains, terrace rising above terrace, even to their highest summits; and others wrest their subsistence from districts the least susceptible of cultivation.

The climate is temperate, very hot in summer and cold in winter, although on the coasts the heat and cold are tempered by the vicinity of the sea.

Useful minerals abound in Japan; among others, the best *copper* known, which is diffused throughout Asia, and even Europe. This metal seems to be of such rare quality that it may be employed in the most delicate clockwork, and for various purposes for which no other copper can be used. *Gold* is obtained in such quantities that government prohibits its exploration, lest this metal should become too common; *kaolin*, of which the Japanese manufacture costly vases, and, finally, *pit coal*, are said to be found here in abundance.

The *vegetation* is fine and vigorous, as in all the warm, temperate countries which have the advantage of being well watered. The principal product is *rice*; that of this country is the most esteemed of Eastern Asia. Wheat and other grains succeed, but are little cultivated. Besides our fruit trees, the varnish, cotton, and mulberry trees, and most of the vegetables found in China; *tea* also is cultivated there, superior in many respects to the best tea imported from China. One particular kind is said to be cultivated for the exclusive use of the imperial family. The shrubs form long avenues, extending even to the summit of a mountain, and descending on the other side. The turf is carefully removed from the surface of the soil; not a plant, nor even a blade of grass, is suffered to grow. When the spring, the season of the tea gathering, arrives, this employment is intrusted to persons whose hands are gloved, and their mouths covered with a respirator, lest the delicacy of the princes and nobles should be wounded by the bare supposition that so precious an article had been sullied by the contact or breath of vulgar people.

Another tree worthy of mention, which flourishes especially

in Japan, and also in the eastern portions of India, is the *camphor laurel*; it rises to a considerable height, and somewhat resembles the linden. A kind of volatile oil, the *camphor*, is found in abundance in every part of this tree. In order to extract it, the branches and roots, divided into small fragments, are placed in bottles filled with water, and surmounted by huge covers. The camphor, being moderately heated, volatilizes and forms a deposit in the straw, with which the interior of the covers is lined. In this state it is of a gray color and quite impure, but it undergoes a refining process in Europe, and then acquires that fine white hue by which it is commonly known. The camphor diffuses a penetrating odor, and is very much employed in medicine.

The *animals* of Japan are not numerous. There is, indeed, no nation which raises so few domestic animals, the land being entirely devoted to tillage. The princes only maintain a few horses, and almost all transportation is performed on the backs of men. Oxen and cows are still more rare, as their meat is never eaten, nor their milk and tallow turned to any account; sheep and goats have been banished, as injurious to cultivation; the dog, and also the cat, the favorite animal of the Japanese ladies, are the most common quadrupeds; the nurture of the silk-worm is every where the object of the greatest care; as for wild beasts, they have almost entirely disappeared before the numerous and active population.

This *population* of the Mongolian race strikingly resembles the Chinese; but the Japanese are more robust, and possessed of more pride and valor; they are also more cruel, more vindictive, and value life so lightly, that if one considers himself injured, he stabs himself, and his adversary must follow his example or be stigmatized as the most cowardly of men; a magistrate proved guilty is also sentenced by order of the court to take his own life. Their language and writing resemble those of the Chinese; their agriculture is very elaborate; their roads admirably preserved, and during the summer the government has them watered, in order to lay the dust. Their fabrics of silk and cotton, porcelain vases, paper manufactured from the bark of the mulberry tree, and various works in lacker, iron, or copper, have attained a high degree of perfection; and many of these

products are sought by the Chinese, especially the porcelain and the lacker.

Education is very extensively diffused among them ; they publish many books, and almost as much attention is paid to the instruction of the women as to that of the men. There are in Japan many different religions, the principal of which is Booddhism. In the 16th century, Catholic missionaries, of the order



Japanese.

of the Jesuits, obtained very great advantages, but they were soon after banished and cruelly persecuted ; and from that time Japan has been absolutely closed to all strangers, missionaries or otherwise, with the exception of the Chinese and Dutch, who once a year are admitted into the port of Nagasä'ki, solely for commercial purposes.*

4. The *Loo Choo Islands*, south of Japan, surrounded by dangerous coral reefs, form a group of charming, fertile, and verdant islands, inhabited by a mild and peaceable people, who, after trem-

* Americans have, however, succeeded in gaining admittance to this country, which will probably become to our nation the seat of an important commerce.

bling before their kings during their lifetime, worship them as gods after death, or at least offer them propitiatory sacrifices. However, if the people are subject to the nobles and the king, the latter is no less so to the monarch of Japan, who always maintains a representative in these islands, charged especially to keep off foreigners, and to interdict, as in Japan, all commercial relations with Europe. Under this influence the Catholic and Protestant missionaries have always found themselves powerless. Their presence is tolerated, but the people are prohibited, under the severest penalties, from lending an ear to their instructions.

5. In the Indian Ocean we find the great *Island of Taiouan*, which, from the fair aspect of its vegetation and its mild climate, received from the Europeans the appellation of *Formosa*, by which it is commonly known. It has the same productions as China; and the abundance of its grains, fruits, vegetables, and poultry suffice to supply the neighboring Chinese provinces. Beyond this it is little known; we are only able to state that the inhabitants of the western coast are tributaries of the Chinese, while on the other side of the lofty chain of mountains, which divide the whole island, the islanders are still independent, and almost wild.

6. The *Island of Hainan'*, south of *Formosa*, opposite the Gulf of 'Tonquin', is still less known than the preceding. On its coasts the pearl fishery is carried on, and its forests contain many precious woods, such as the *white sandal*, sought, on account of its fragrant odor, for the manufacture of boxes and various fancy articles; the *citron* or *candlewood*, so called from its odor or appearance, and also employed in inlaid work; the *eagle-wood*, a variety of the aloeswood, of which we have already spoken, is used both by perfumers and cabinet makers.

We shall make no mention at present of the numerous islands of the various archipelagoes at the south-east of Asia, but shall refer to them hereafter, in connection with Oceanica, of which they form an important part.

7. *Cēy'lon* is a large and beautiful island, (whose form has been compared to a leg of bacon,) situated south-east of India, from which it is separated by the Strait of Manaar', almost entirely dry at low tide. Its aspect is very fine; almost impenetrable forests (the asylum of multitudes of wild beasts) clothe

the sides of the mountains, whose highest summit is Adam's Peak, surmounting a little plateau, on which may be seen the impression of a gigantic foot, which is, according to Europeans, that of Adam, and according to the natives, that of their god Booddha.

The climate is more temperate than that of India, on account of the vicinity of the sea, except in the interior, where the heat is often stifling and unhealthy. A more exuberant vegetation than that of Ceylon can scarcely be found; all the fruits of India there grow in abundance and to perfection; pineapples, melons,



Pineapple.

and oranges grow in the woods, without cultivation. The most noted product of the Island of Ceylon is the *cinnamon*. This is the second bark of the *cinnamon laurel*, which grows to a height of 25 or 30 feet, but which is principally cultivated in bushes at the south-east side of the island. The cinnamon is collected from the three-year-old boughs. They are severed by means of a pruning knife; the bark is then slit lengthwise and crosswise, and carefully removed. The gathering is generally made during

the rainy season, because the bark is then more easily detached. The strips of bark are bound together in packages, and during a slight process of fermentation, which ensues, the outer covering becomes loosened, and may afterwards be removed with the greatest facility. The strips of bark are then fitted one within another, giving them the form of hollow tubes, in which they are exported. The cinnamon has an aromatic, sweet, and pungent taste, and a very agreeable odor. It is used in medicine, and more especially in the seasoning of dishes.

Ceylon produces gigantic *cocoa nut trees*, of which the English have begun to make regular plantations, both in consideration of the oil, which is extracted by grinding the nut, and for the sake of the *arrack*, a kind of brandy, which is procured by the distillation of the agreeable juice, which exudes in abundance from its branches. Coffee plantations of considerable extent are also established there.

The *talipot palm* is also found in Ceylon in the interior of the forests of the island. This is a gigantic tree, which rises to a height of 100 and even 200 feet. It is said to flower but once in its old age; then, as soon as its fruits have ripened, it withers and dies. From its marrow is extracted the *sago*, a light substance employed in cookery; but the most useful part of the talipot is its enormous leaves, in the form of a fan, a single one of which is sufficient to protect ten or twelve persons from the sun or rain. Many an overseer, while clearing the lands destined for a plantation, has had no other shelter, even in the rainy season, than one of these gigantic leaves, thrown transversely, in the form of a tent, over a stout stick, attached at the two ends to two stakes planted in the earth. These same leaves dried, and suitably prepared, are used instead of paper for the drawing up of public acts and important documents, being peculiarly adapted to these purposes, as they possess the property of repelling insects. These leaves, after being dipped in boiling water, are polished with hard wood, and when dry are cut in strips six inches in width. On these the writer traces his letters or figures with a sharp steel instrument, then passes over the surface of the leaf an oily, colored liquid, which leaves no traces except in the characters engraved by the pencil, and renders them perfectly legible.

Such manuscripts are much more durable than our papers. Some of them have been found in the pagodas in India, which date back, it is said, more than 2000 years.

But the most curious plant which grows in Ceylon is the *nepenthes*, whose leaves terminate in spiral fibres bearing a membranous urn, 3 or 4 inches in length, filled with a honeyed liquid, rarely potable, (notwithstanding the statements of travellers,) on account of the swarms of little insects, which, allured by the odor, become drowned, or deposit their eggs in it.

Among its animals, Ceylon is chiefly celebrated for its *elephants*, the strongest, the most intelligent, and the most docile in the world; the islanders are so persuaded of their superiority, that they affirm that those of other countries salute them when they



Spectacle Snake.

meet. Unfortunately, in the heart of this rich and beautiful island wild beasts are very numerous — leopards, jackals, wild boars, &c.; crocodiles infest the rivers, and serpents are common; among the latter, the *spectacle snake*, so called from a design in the form of spectacles that this reptile has on a membrane, which, situated upon its head, dilates and erects itself like a kind of cowl, when it is enraged and prepares to attack its enemy. This inflation of the membrane may serve as a precious warning to put one's self immediately out of the animal's reach. These monsters, strange to relate, have a great passion for music; and the Indian jugglers avail themselves of this circumstance to capture them, after which, by means of certain plants known only to them, they have the art of preserving themselves completely from the effects of the venom of these terrible reptiles. As in India, the *buffalo* is the principal domestic animal. We have already mentioned the *pearl oyster fishery*, which is carried on in the Strait of Manaar, and the product of which yearly diminishes.

The population, of the Hindoo race and brown complexion, is indolent, superstitious, and generally devoted to the worship of the god Booddha. However, it is beginning to be sensibly influenced by the truths of the gospel; the Catholic missions, which are now of long standing, comprise quite a large number of adherents, and the Protestant missions, with their numerous and flourishing schools, have recently obtained very great success.

8. The *Maldives* form, south-west of India, an immense archipelago of islands, islets, and rocks, as many as 12,000 in number, and so surrounded by reefs of coral that large vessels cannot approach them. Only 40 or 50 of these islands are cultivated, producing abundance of dates, bananas, and other fruits of India. Here also the *cocoa nut tree* renders inestimable services to the islanders. Its leaves afford them a pleasant shade, and when dry are used for thatching their houses; its trunk serves as pillars to sustain their roofs, or as masts for their boats. Of the matting in which its fruits are enveloped ropes are manufactured, and a soft down is furnished for their beds; at the root of the palm is found a fibrous substance, of which garments are made. Its nut may easily be converted into a graceful cup; the liquid which it contains changes successively, according to the age of the fruit,

from the fresh insipidity of fountain water to that of the sweetest savor; its meat furnishes an agreeable and nourishing aliment, also an oil which serves to moisten the food of the Maldives, and to illuminate their dwellings; there is no more delicious or refreshing beverage than the liquor, which is extracted by incision from the fruit-bearing branches.



Cocoa Nut Palm.

The only domestic *animal* which is common in these poor islets is the *kid of India*, a charming little gazelle, which may be seen skipping from place to place, wherever aromatic plants are to be found; its milk is very savory, and its flesh is quite delicate.

The principal sustenance of this country is derived from the sea. The fish are of extraordinary abundance; they move in shoals along the shores, penetrate into the canals, and sport in all the small basins.

The population, of Arabic origin, but somewhat mixed with the Hindoo race, is all Mahometan, and carries on quite an active commerce with India.

9. The *Lac'cadives*, which may be considered a continuation of the preceding, are still smaller, and less productive. The only curious product which they export (as likewise the Maldives) are *cowries*—small shells, which serve for money of trifling value, in the south of Asia, and in almost all Africa. In Bengal about a thousand of these shells are equivalent to a franc; in Africa they are worth more than double that amount. Whole ships are loaded with them for this latter continent, and they are the object of quite an extensive commerce.

10. In the Mediterranean, Asia possesses only islands which, notwithstanding their celebrity, have fallen into decay. Thus *Cyprus*, although flourishing in the middle ages, is now desolate, and almost uncultivated. Its only important production is its famous *Cyprus wines*, which when old become as thick as sirup. Immediately after the vintage they are poured into leather bottles besmeared with pitch; this usually gives them a very disagreeable odor, which they do not lose until after many years. The population of this island and the following are partly Greek and Christian, partly Turkish and Mahometan, and almost universally miserable.

11. *Rhodes*, south-west of Anatolia, is a large and beautiful island, whose Greek name, which signifies *rose*, recalls to mind its magnificent valleys, in which roses and myrtles grow spontaneously, reaching even to the sea shore. It is famed for its wines, and especially for its building wood, and timber yards, the most extensive of the Ottoman empire. It was formerly celebrated for its brazen Colossus, ranked of old among the seven wonders of the world, and which, erected at the entrance of the harbor, was high enough for vessels to pass between its legs.

12. The *Asiatic Sporades*, small islands scattered along the western coast of Anatolia, were formerly excessively rich and

flourishing, but they have suffered much from the tyranny of the Turks. The principal are *Samos*, which traffics in its muscat wines, and the best olive oil of these countries. *Scio*, or *Chios*, whose population, almost all Greek, was reduced from 130,000 to 20,000 persons by the terrible massacres of the Turks in 1822; thence is obtained almost all the *mastic*, which the women of the East are accustomed to chew in order to perfume their breath and whiten their teeth; the mastic is a kind of gum which exudes from the trunk of a tree called *lentisk*; but the greater part of it is monopolized by the court of the great sultan. *Metelin*, formerly celebrated under the name of *Lesbos*, exports oils, the best wines of these countries, and many southern fruits. This island, as likewise all the coasts of Asia Minor, furnishes much *valonea*, a large species of acorn, which is employed in tanning operations, and has brought extremely high prices within a few years. Although it is our design to cite here only the principal of these islands, we must not except the very small island of *Patmos*, where the apostle St. John was exiled, and where he had the different visions which he relates in the Book of Revelation. It is situated a little south of Samos.

CHAPTER VII.

THE CONTINENT OF AFRICA.

IF you have been vividly impressed by the wonders of nature as exemplified in Asia, they will strike you no less forcibly in the study of the continent to which your attention is now directed. Africa is, in fact, the country of mystery and novelty. . It is likewise the only continent where are yet to be found immense and unknown regions, which have never been penetrated by any enlightened traveller. Nowhere does Nature present more astonishing or more striking contrasts ; a vegetation of exuberant richness, and forests of colossal plants, border upon the most vast and dismal deserts ; while gigantic animals, in prodigious numbers, congregate in the immediate neighborhood of the human race, who, feeble and impotent, are reduced to tremble and cringe before these wild inhabitants of the desert. Climate, vegetables, animals, and populations will there furnish us with new and sometimes extraordinary phenomena, such as Asia has not exhibited to our view, and which will afford us additional reason to admire the infinite variety which the Creator has established among all his works.

SECTION 1. FORM AND BOUNDARIES OF AFRICA.—Africa, in its form, is merely a peninsula of Asia, its size alone entitling it to rank among the continents. For a continent, truly defined, is a great tract of land, which, like an organized body, is provided with peninsulas, serving it in the place of members, and which enable it in a manner to place itself in communication with the neighboring continents. Thus you see Asia communicating with America through Kamtchatka, with Oceanica through Indo China, with Africa through Arabia, and with the south of Europe through Anatolia. Of these advantages Africa is completely destitute ; it

has no peninsulas, nor consequently any of those deep gulfs by which navigation and commerce penetrate into the heart of a continent.

Nor is this circumstance of trifling importance. From the solid and massive form of Africa result very grievous consequences. Nothing so draws men together, nothing so facilitates commerce and civilization, as the neighborhood of the sea. God has, you are aware, distributed his gifts among men in an infinitely varied manner. One country possesses cotton, and does not produce hemp or flax ; another has gold, and lacks pit coal ; another furnishes coffee, cocoa, or spices, and is compelled to seek elsewhere both wheat and iron. Thus, in order that blessings may be dispensed among all nations, each must procure from among others the productions which it lacks, in exchange for those of which it enjoys a superabundance. But if these commodities, oftentimes very bulky, were obliged to be conveyed by land across countries which are destitute of good roads, these transportations would be exceedingly difficult, lengthy, and expensive, and even for certain materials impossible, whilst by sea they would be rendered far more practicable.

If, therefore, numerous peninsulas and gulfs are the means of introducing the waters of the sea even into the interior of a continent, as is the case in Europe and America, for example, communications between the inhabitants are thus very much facilitated ; they are enabled to exchange their different productions ; they feel their dependence upon each other, friendly relations are established among them, and they no longer seek to destroy each other, but to trade peaceably. Thus are blessings and riches diffused among all ; civilization develops among men, the manners acquire polish, the arts of peace create miracles of industry, and man actually rules over all the creation, of which his Maker decreed him king.

But Africa, like a trunk without branches, possesses none of these precious advantages. Seas indeed encompass it, but with the exception of the Mediterranean, they are tempestuous and formidable ; it has none of those internal seas, or of those well-sheltered gulfs, which elsewhere early invited man to navigation, and facilitated his first nautical essays. The African populations (those

of the northern coast excepted) have always been confined within narrow limits, almost without relations with each other, waging incessant and bloody wars, subjecting each other to slavery, guilty even of cannibalism, the prey often of famine, poverty, and distress, and hardly capable in certain places of defending themselves against the lions or other wild beasts. Doubtless, in the march of progress, Christianity will rescue these colonies from their brutality and degradation, and introduce civilization among them. Already have noble efforts been made for this end; already have encouraging successes been obtained, as we shall soon perceive; but nevertheless, in consideration of the absence of peninsulas and gulfs which characterizes Africa, we must always expect to find the welfare and civilization of its inhabitants seriously affected by this circumstance.

Having discussed the form of Africa, we will describe its boundaries, and then pass immediately to more important subjects. It is bounded north by the Mediterranean, west by the Atlantic Ocean, east by the Indian Ocean and Red Sea; the isthmus of Suez unites it to Asia.

SECT. 2. MOUNTAINS OF AFRICA.—In the absence of all peninsulas worthy of our attention, we will enter at once upon the study of the plateaus and low plains of Africa; but we must first say a few words in reference to the mountains which circumscribe and constitute the high country. These chains, of considerable extent, are few in number, but they are peopled by great numbers of extremely diversified and curious beings.

1. NIEUWVELD MOUNTAINS. — The chain which is designated by this general name extends from east to west at a certain distance from the southern coast, north of the famous Cape of Good Hope and Cape Agulhas, which terminate the continent at the south and south-west. Its peaks are remarkable for their abrupt and perpendicular declivities, and their table-shaped summits. These mountains are generally arid and unwooded, containing only feeble springs, rarely an actual stream; and the beings which there find subsistence are those which fear not arid and abandoned places.

Such are the *termites*, insects whose industrious habits are so similar to those of ants, that they are generally, although incorrectly,

denominated *white ants*. They construct themselves dwellings of 12, 15, and even 20 feet in height—enormous dimensions, when compared with the size of these insects; greater, indeed, in proportion, than a monument would be to us; eleven times the height of the pyramids of Egypt. These huts, in the form of towers, domes, or cones, are composed wholly of a species of clay, which, moulded with what may be termed the saliva of the termites, acquires an extraordinary durability. It would be easier to demolish one of these columns by tearing it from its foundations, than to break it through the middle; men, and even large animals, may mount without crushing them; and when they are collected in large numbers, on an even surface, they may be mistaken at a distance for the huts of a village of natives.

The interior of these habitations is no less remarkable than the exterior. In the centre is a kind of apartment, in which, surrounded by attendants, but immured and never permitted egress, are the king and queen, or rather the father and mother; the latter, at a certain time, acquires proportionally huge dimensions, and lays, it is said, as many as 80,000 eggs in one day. Around the royal cell are the brooding places or nurseries, where the eggs are deposited, and where the young larvæ are reared. Beyond are vast storehouses of provision, by means of which the larvæ, after a first transformation, increase in size, and become either *workmen*, which, in the interval of forming perfect insects and developing wings for flight, are charged with all the constructions of the colony; or *soldiers*, neutral insects, destitute of wings, a hundred times less numerous than the workmen, and which, armed with mandibles (a species of jaws) capable of piercing their enemies, and with formidable pincers, are foremost in attacking whatever approaches to make a breach in the common habitation. Spacious and vaulted galleries connect together every part of the edifice, and often extend beyond it; for it is a remarkable fact that the termites never labor in the open air, but always under subterranean galleries of greater or less extent.

Besides the *warlike termites* are also distinguished the *wandering termites*, and especially the *destructive termites*, the most mischievous of all; they insert themselves underneath the foundations of a dwelling house, gnaw and devour the piles, the beams,

the planks, and the furniture, operating always in the inside, and without any external appearance, until the piece of wood, completely excavated, yields and breaks. Thus an edifice sometimes falls suddenly, without its having been possible to suspect the danger. In a single season a house of European construction may be entirely demolished, or a negro village may totally disappear. These insects have been known in a single night to penetrate through the leg of a table, traverse it from bottom to top, reach a trunk placed upon it, and entirely consume the papers, pencils, &c., which it contained.

However, these dangerous animals serve, in the hot countries, to purify the soil from the matter, which, decomposing in it, would engender miasm. The Africans broil them on the fire, and regard them as a delicious dish; they constitute the principal food of the quadrupeds of the order edentata, and particularly of pangolins.

The *manidæ*, or *pangolins*, are really mammals; but at first



Pangolin.

approach they would be taken for lizards, on account of the triangular and sharp scales with which their tail and body are entirely covered. These animals, naturally mild and timid, can only escape from their enemies by rolling themselves up in balls, which position elevates the points of their scales, and renders them intangible even to the most formidable animals, such as the tiger or the leopard. But this armor does not prevent the negroes from killing the pangolins with clubs; for they find its flesh white and delicate. This inoffensive quadruped, from one foot to one and a half in length, only issues from its burrow at nightfall, in order to seek its food, consisting of ants or termites. It makes a

hole in the ant hill with its claws ; then, introducing into the midst of the terrified insects its glutinous tongue, like an enormous earth worm, suddenly withdraws it, and swallows the ants which adhere to it.

2. LUPATA MOUNTAINS. — Other chains of mountains, very imperfectly known by the vague name of *Lupata*, (or thorn of the world,) extend north-east of the preceding, even to the borders of the Red Sea. We shall only have it in our power to speak of the southern portion, the Maloutis.

1. The *Blue Mountains* derive their name of *Maloutis* from a word which signifies *peaks* ; and in truth this is their prevalent form, while the other mountains of Southern Africa generally assume the flat or table shape. Quite the reverse of the Nieuwveld range, these mountains are well wooded ; they are wa-



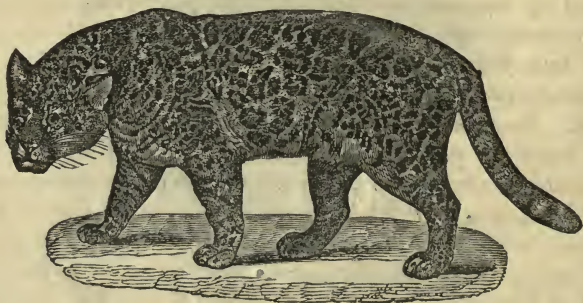
Antelopes.

tered by abundant rains, serving to supply a considerable number of streams and great rivers, which descend from them at the east

and west, especially in the latter direction. The high grass of their valleys sustains a multitude of wild animals of every kind.

The most interesting of these animals are the *antelopes* — a race particularly developed in Africa, since of the 80 species which constitute it, 60 are found in this continent alone. They are quadrupeds admirably formed for running, of a graceful figure, and with a head usually decorated with hollow and fluted horns; they are mild and sociable, with large and beautiful eyes, and an acute sense of hearing; they are gifted with the greatest lightness of foot, and can perform incredible leaps. Some, such as the *elk of the cape*, whose flesh is very much in demand, attain the size of a horse; they live in large companies, and often defy the pursuit of a horseman.

But the mild and peaceable antelopes are exposed to the attacks of a great number of enemies. They are, together with the monkeys, the habitual prey of *panthers*, those terrible tawny beasts, spotted with black, which, smaller than the leopard, display no less agility than the latter in seizing their victims, either



Panther.

by climbing trees or otherwise. These mountains also produce many other carnivorous animals, such as *wild cats* and *dogs*, both great destroyers of game, *jackals*, whose orange-colored fur, bordering on red, is very much prized; and the spotted *hyena*, very similar to the striped hyena of Asia, but much more ferocious; for the continual wars which have occurred in Africa have

rendered it a *man-eater*, and it often enters the precincts of houses for the purpose of carrying off children.

However, the most sanguinary beings to whom the Maloutis have served for a retreat are colonies of wild cannibals, known by the name of Marimos. A French missionary, M. Arbousset, who, a few years ago, visited and preached the gospel to them, states that it was famine which first goaded these unfortunate tribes to cannibalism. But that which was originally only a kind of fatal necessity has since become a passion. They have acquired a taste for these odious repasts, and a thirst for human blood. Descending suddenly from the tops of their mountains upon the travellers whom they see afar off in the plain, they seize and carry them away, or, killing and cutting them in pieces on the spot, remove them in fragments. After having devoured their flesh, they melt the fat, and drink or anoint their hair with it. It is to be hoped that, since the missionary wrote these accounts, the progress of civilization and the gospel have put an end to these atrocities.

2. With regard to the long chain of the *Lupata Mountains*, we only know that the forests at the foot of these mountains are tenanted by immense multitudes of wild beasts, and especially by rhinoceroses and elephants. The *rhinoceros of Africa* differs but little from that of Asia, except in this respect, that it has generally two horns, the principal of which is sometimes three feet long. Some of these animals are black, and some white, and the latter are remarkable for the length of their horns. These animals are fond of retreating into the *jungles*, or almost impenetrable thickets, obstructed by acacias and other thorny shrubs, among which they occasionally track paths; but unfortunate is the traveller who encounters them face to face, as he runs much risk of being trampled pitilessly under foot. The natives dig pits in these paths, which they carefully cover with branches and earth, for the purpose of entrapping the rhinoceros, whose flesh is considered equal to that of the ox.

Similar snares are laid for the *elephants*, whose precious ivory is always, in these regions, the object of a very extensive commerce. The *elephant of Africa* differs in certain points from that of Asia: it has much larger ears, a convex instead of

concave forehead, and only 3 toes instead of 4, in the hind feet; the females have also tusks, which is not the case in India, and these tusks are generally long and strong, frequently from 6 to 8 and 9 feet in length, weighing from 60 to 100 pounds, and valued in Europe at as much as 40 dollars. The elephants of Africa are extremely malicious, and will not suffer themselves to be tamed, like those of Asia.

3. MOUNTAINS OF THE MOON. — The plateau of Upper Africa is bounded on the north by the *Mountains of the Moon*, concerning which, from time immemorial, all kinds of fabulous tales have been related. But no European or American traveler having visited them, we must abstain here from entering into details which offer us no guarantee of their authenticity.

4. THE CONGO MOUNTAINS. — These mountains, which form the western border of the plateau, are also very little known; they contain, however, a multitude of leopards, panthers, and other ferocious animals; and there also are encountered the two animals whose intelligence bears the nearest approach to that of man



Chimpanzee.

—the *gray jacco*, a parrot celebrated for the facility with which it learns to speak, and the *chimpanzee*, which is the monkey, the

most remarkable for its resemblance to the human race, although a wide chasm intervenes between the development of the intellectual faculties appertaining to this animal and those with which the lord of creation is endowed.

This monkey attains, according to the accounts of travellers, a stature of five feet. Its body, which has no tail, is covered with long, black, and coarse hair, the face, ears, and inside of the hands alone being destitute of it. Its ears are very large, and its arms, longer than those of man, reach to the knees. Supported on a stick, the chimpanzee can walk for some distance upright; but its hands differ sensibly from ours, and always recall the traits of a climbing animal. It sleeps on trees, and constructs for itself a habitation, as a shelter from sun and rain. When the negroes build a fire in the forests, the chimpanzees approach, to seat and warm themselves around it, but have not sense enough to preserve the flame, by going in search of wood and replenishing it. They go in companies, and sometimes kill negroes in isolated places. The full-grown chimpanzees cannot be caught alive, because they are so strong that ten men (declares a traveller) are not sufficient to take a single one of them. They can only be taken when young, in which case they are easily tamed, and become very docile. They have been seen to seat themselves at table, flourish their napkin, make use of the spoon and fork, pour out for themselves, and even strike their glasses, when invited to drink.

5. THE KONG MOUNTAINS. — This chain is situated north of the vast gulf which the Atlantic forms towards the middle of the western coast of Africa, and which is known by the name of the *Gulf of Guinea*. These mountains, which extend first from east to west, and afterwards to the northward, are celebrated for their *gold*, which is procured principally by the washing of the sands, and which, under the name of *tibbar*, (gold dust,) is current every where in Africa as *money*. It is estimated by weight, and every negro of these countries habitually carries about him a small pair of scales for this purpose.

The Mountains of Kong are generally clothed with a rich and abundant vegetation; but the most remarkable tree which characterizes them is the *shea* or *butter tree*, (*micadamia*.) The palm

tree, so abundant on the coasts, becomes more and more rare in proportion as we ascend the mountains, and the oil can only be procured in very small quantities ; but an ever-bountiful Providence supplies the deficiency by the micadamia. The butter tree bears some resemblance to the oak, and the nut which it produces is enveloped in a pulp, or savory flesh ; the kernel contained in the nut is about the size of a chestnut ; it is dried in the sun, then pounded and boiled in water ; the fat portion detaches itself and floats on the surface, where, on becoming cool, it hardens ; it is then collected, and without further preparation is eaten with bread. This oil is of great repute, having a more agreeable taste than milk butter, and possessing also the capability of being preserved a long time without salt — no slight advantage in a country where that commodity is so precious.

These mountains produce a great number of wild beasts, and especially immense troops of very mischievous *apes*, of which the most curious are the *callitriches*, or *green monkeys* ; so called on account of the olive green shade of their hair, which is, as you are aware, a rare color among animals ; also the *gorilles*, very similar to the orang outangs, but stronger and still more rare.

6. THE ATLAS MOUNTAINS. — This vast system of mountains is composed of three principal chains — the *Lesser Atlas*, which follows the coasts of the Mediterranean from the Straits of Gibraltar, as far as Cape Bon, opposite which, when the sky is clear, may be seen the banks of the great Island of Sicily ; the *Greater Atlas*, which pursues very nearly the same course, but at some distance from the sea ; and the *Upper Atlas*, or *Daran*, which, almost parallel with the Atlantic Ocean, connects towards the west the two preceding chains, and presents every year, by reason of its great elevation, the spectacle of perpetual snows.

The *vegetation* of the Atlas has much similarity to that of the warm climes of the south of Europe. The dense thickets which are found there are composed, for example, of *furze* and *lentisks*, branching and crooked shrubs, whose reddish fruits are about the size of a small pea, or *arbuté trees*, with their red and sour fruits, having the form of a strawberry, and which afford a treat to children and birds. Higher up may be seen forests of *oaks*, with

their leaves always green, even in winter, and one variety of which bears *sweet acorns*, which are the delight of both the rich and poor inhabitants of the Atlas. Higher still, we encounter *pin*es, (but no fir trees,) and in certain places *cedars*, those beautiful trees of which we have spoken in connection with Lebanon.

The animals of the Atlas are as various as numerous. *Lions* have become rare, but *panthers*, *jackals*, *monkeys*, and *gazelles* are frequently met with, besides several interesting quadrupeds of which we have never yet had occasion to speak. The *caracal* or *Barbary lynx*, of the size of a large dog, of a red color, is re-



Barbary Lynx.

markable for the tufts of hair which terminate its ears. It has the habits of the wildcat, but as it is larger, it attacks large game, and especially the antelope; caught young, it may be easily tamed. When pressed by hunger, it is said to be bold enough to attack man.

Another quadruped, which is very similar to the preceding, is the *quepard*, a charming animal, of graceful, slight, and bounding form, with a tawny skin, spotted with black. The Mussulman princes have long been in the habit of making use of it in the chase, bearing it behind them on the saddle, and not removing the bandage with which its eyes are usually covered, until they come in sight of the unfortunate gazelle, which in a few bounds

the quepard can soon overtake and strangle, contenting itself with merely sucking its blood.



Quepard.

Another animal, which lives in troops in these countries, and is the favorite prey of the ferocious beasts of which we have just spoken, is the *bubalus*, the least graceful of the antelope species. This timid animal, of the size of a stag, with red hair, and a tuft of long black hair at the end of the tail, presents a very singular physiognomy, on account of its narrow, elongated head,



Bubalus.

its eyes placed almost close to the ears, and the manner in which its large horns widen and curve, first forward and then backward.

SECT. 3. PLATEAUS OF AFRICA.—Africa includes only a small number of plateaus, almost all separated from each other by vast plains, very different in aspect, climate, productions, and inhabitants, and of which one only—that which occupies all the southern portion of the peninsula—can bear comparison with the vast plateaus of Upper Asia.

1. PLATEAU OF SOUTHERN UPPER AFRICA.—This plateau is surrounded on four sides by the Nieuwveld, the Blue, and the Lupata Mountains, the Mountains of the Moon, and of Congo. Its most southern portion is but little known to us; it is generally quite elevated, inclines towards the west, and is somewhat mountainous in the eastern portion.

Aspect.—The general aspect of the plateau is that of vast plains, usually sandy and arid, interspersed in some portions with scattered trees, intersected here and there with hills and mountains, and only towards the north-east occupied by dense forests. These plains, farther than the eye can reach, covered with the graceful and delicate flowers of the heath, are clothed after the rains with very abundant herbage; but the heat of the sun soon withers it entirely, so that for a great part of the year the traveller might fancy himself in a perfect desert. To travel in these solitudes, one requires a very heavy wagon, drawn by ten or twelve oxen, which sometimes sinks in the sand, sometimes becomes entangled in the scattered fragments of rock; and while he is repairing a pole or a broken axle, the oxen escape to seek, at a distance, fresh grass and a little water, at the risk of falling into the clutches of lions. How many times has the missionary, thus abandoned in the midst of the desert, been compelled to wait whole days a prey to the horrors of thirst, and beneath a scorching sun, until his companions sent in the pursuit have returned with the fugitive cattle!

Climate.—The climate of these countries is perfectly salubrious and temperate, but the seasons there are entirely the reverse of our own. The rainy and cold season corresponds with our summer months, and in the month of July or August snow is sometimes, although rarely, seen to fall, which is always a great calamity to the natives, whose cattle are obliged to pass the whole year in the open air. This plateau being quite elevated, the heat

is not so excessive as would be supposed from its vicinity to the equator ; nevertheless, its long continuance during the summer eventually dries up the greater part of the springs, and if, as very often happens, one or two years elapse without any rain, the scourge of the drought gives rise to unheard-of evils. The cattle, which are almost the only wealth of the natives, perish by thousands ; and they themselves would for the most part die of want, were it not for the *locusts*, which, in ordinary years only a destructive plague, in times of famine become a precious resource. The inhabitants rise every morning two hours before daylight in order to seek them while they are yet benumbed by the coolness of the night, and return at noon, bearing on their heads enormous quantities of this kind of game, which they cook in large vessels, and on which they subsist for many months.

It is impossible in our climate to conceive of the anguish which the torment of thirst causes the traveller, who is obliged to cross the desert during the season when all the springs are dried up. In order to supply the want of water, the natives establish here and there, in the dry beds of the rivers, a very ingenious kind of *suction pump*, consisting of a hollow reed, sunk deep in the soil, and bound at the lower extremity with a little bundle of dried grass, which serves for a filter. They apply their lips to the upper extremity of the reed, and by great efforts of the lungs succeed in raising the water and ejecting it into their vessels, which are generally nothing more than the shells of ostrich eggs.

Minerals are not abundant on the plateau. It contains small quantities of *copper* and *coal*, which are but little explored ; *iron*, the use of which is understood by the natives ; and *ochre*, a yellow or reddish earth, which is employed in the arts, and which, mixed with fat, is used by certain colonies for besmearing the body, by way of ornament. No salt is found there, the want of which is severely felt.

Nor are the *vegetables* a striking feature among the productions of Upper Africa. They are, in truth, neither abundant, varied, nor very useful, at least in the southern regions ; for the vegetation appears to be far richer and more diversified towards the north. The forests are generally composed of shrubs and thorny trees of the mimosa or acacia species. The most remark-

able is the *mimosa of the giraffes*, so called because its leaves are the favorite food of these animals. This tree, with a colossal trunk, resembles in its form our finest apple trees, and its foliage, always green, offers a delightful refuge to the birds which it refreshes with its shade. The natives choose a spot for their houses beneath the shelter of the spreading mimosa, and they are always careful to preserve one of them in the common court, where the villagers assemble to prepare and sew their skins. Its wood can be used for timber; it is also very hard, and has the advantage of never being attacked by worms; unfortunately, these useful trees, which are of very slow growth, have been mostly destroyed.

Missionaries have introduced into these countries the cultivation of wheat, potatoes, maize, and fruit trees, which succeed perfectly. The natives had already kidney beans, melons of middling quality, and pumpkins or gourds of various forms, the pulp of which they eat, hollowing and drying the rind, so as to form it into calabashes, spoons, and all kinds of vessels. The millet is always, however, the basis of the food of the inhabitants.

The *millet of Africa*, known under the various names of *cafre wheat*, *dourah*, or *sorgho*, grows to the height of 6, 8, and 12 feet; at the top of the stalk is a kind of plume or panicle which contains the seeds. These are very abundant, and much larger than those of the millet of our countries; it is moreover a very fruitful plant, and yields about 200 grains for one sown. The natives eat this grain boiled in water or milk, or of the meal make bread, which is black, heavy, and rather tasteless. This plant requires a warm climate, but can adapt itself to any, even inferior soils. It demands, however, much care, both in weeding and in preserving it from insects, and later from the birds.

Animals are the especial wealth of the African plateau. Although the recent introduction of firearms into these regions has already greatly diminished the number of its wild beasts, it may still be said to be the *paradise of sportsmen*; thus in three months (scarcely six years ago) three Englishmen, followed by natives, who accompanied them in order to secure the remains of the animals which they might slay, brought down more than 50 elephants, and about 100 rhinoceroses, to say nothing of the lions and antelopes.

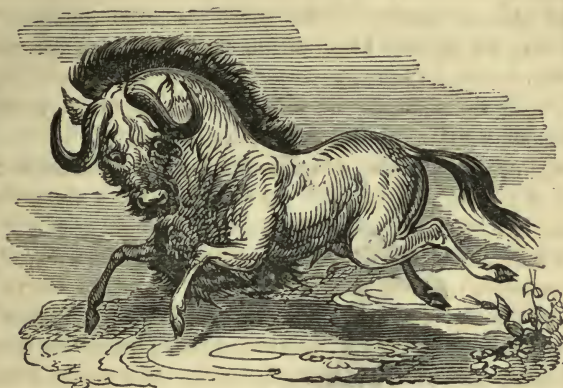
The *domestic animals* are, first of all, the *ox*, which constitutes the principal wealth of the natives, insomuch that the fortune of a man is estimated by his head of cattle, and oxen usually take the place of money. They raise also some sheep, whose wool is very rough: the *horse*, which first received the cognomen of the *incomprehensible ox*, is now very much appreciated by the natives, and multiplies very rapidly. Formerly they usually travelled mounted on the backs of their oxen.

Among *wild beasts* are encountered, on the plateau, a great number of *hyenas*, *jackals*, *wild cats* and *dogs*, a few *leopards* and *panthers*, and many *lions*. The latter, although greatly diminished of late, and rendered more timid by the introduction of fire-arms, are, however, still formidable. One would no longer find there, as did the English missionary Moffat twenty years ago, whole colonies compelled to build their habitations on trees, to escape being devoured by these animals. But there is an instance alleged of one, among the French evangelical missionaries, who has killed no less than 20 around the dwelling where he has fixed his abode.

The most dangerous of these terrible hosts of the desert are those which, having contracted the habit of devouring dead bodies during the incessant wars of the natives, from that moment follow the footsteps of man, and prefer his flesh to any other. However, even these retreat before him by day and one of them has recently been cited, which an unarmed traveller restrained two days and a night by the fixedness and power of his glance.

In these immense plains are encountered incredible numbers of *gazelles* and other species of *antelopes*, among others *springboks*, (or *leapers*,) which have sometimes been compared to swarms of locusts, but the number of which is rapidly decreasing. The *gnu*, also of the antelope race, presents a somewhat singular appearance: its body resembles that of a small horse, with slender legs and brown hair; but its head, which is very large, is covered with a heavy beard and an upright mane, as also with two large horns, overhanging the forehead as far as the eyes, and then curving upwards, terminate in a sharp point. Their flesh is very delicate, and the colonists wage a fierce war with them; but they are very distrustful, and difficult of approach,

When wounded, they turn upon the hunter, and pursue him as long as they have sufficient strength left to sustain them.



Gnu.

Charming tenants of these solitudes of Upper Africa are the *zebras*, the finest formed and the most elegantly clothed, perhaps, of all quadrupeds: the zebra has the shape and graces of the



Zebra.

horse, the fleetness of the stag, and its whole body is covered with black and white stripes. It is said to be as sober as the ass, and subsists on dry and tough grass; it possesses much

strength, and defends itself against carnivorous animals. If it could be perfectly tamed, it would be of great use on account of its extreme swiftness. Two other varieties of the zebra, the *quagga* and the *dow*, which inhabit these same countries, differ only inasmuch as they have stripes merely on the fore part of the body.

There remains to be mentioned but one other inoffensive quadruped, which, like the preceding, frequently becomes the prey of lions: this is the *giraffe*, one of the most beautiful ani-



Giraffe.

mals in creation. The giraffe is as remarkable for its size as for the rapidity of its course. Its neck is very long; its head, which is small, and surmounted by two long horns, concealed beneath the skin and covered with hair, often towers to a height of 20 feet; its legs are long and slender, the fore legs longer than the hind legs; the body, which appears to be very short, is of a yellowish color, spotted with black.

Nothing can equal the somewhat massive dignity of their movements; when scattered here and there, they browse on the highest buds, and rear their beautiful heads above the verdant dome of the acacias of their native countries. In the open plains, the giraffe can easily outrun its enemies; but the lion lies in wait for it at the springs, where it goes to drink, and if the latter does not succeed in striking him a violent blow with its hoof, (which sometimes kills him,) he leaps upon its back and makes it his prey. The negroes also hunt it as an excellent, and especially as a very abundant game; with good horses they are enabled to overtake it after several hours' pursuit, and it is much to be feared that these mild and peaceable animals will soon entirely disappear.

Among the *birds* which inhabit these vast plains must be specified one already known to us, and which is the largest of all — the *ostrich*; too heavy to fly, but whose wings aid its rapid course. The ostriches are also gradually disappearing before the progress of civilization in these countries.

A curious bird, very common throughout Southern Africa, is the *cuckoo indicator*, or the *honey bird*; this little winged animal, of the size of a finch, and of a grayish color, guides the traveller to the comb of the wild honey bees. It warbles, flutters, and hovers around him, until it has succeeded in arresting his attention, then shoots forward as if to direct him, perching itself here and there, and looking back to see if it is followed; when at last it arrives at the hollow tree, or abandoned hive, which contains the honey, it points it out with its bill, and alights upon some neighboring branch, impatiently awaiting its portion of the prize. When the traveller has obtained the honey, which is easily done by suffocating the bees by means of the grass which he burns around the swarm, the bird conducts him to a second, and sometimes even to a third receptacle.

Other no less singular birds are the *grossbeaks*, living in communities, and which on this account have been called *republican birds*. This community consists of an assemblage of nests, which, although independent of each other, and having each a private entrance placed underneath, are, however, all collected under one roof. This roof, which is composed of long grass, and in the

form of a parasol, is often 8 feet in circumference ; it protects them completely from birds of prey and the heaviest rains. When the family increases, it adds another story to its dwelling ; but always underneath, taking care to leave small apertures for communicating with the upper story. A French missionary has seen on a single mimosa two of these nests, one of which had no less than 70 openings.

The plateau of Upper Africa would present to our notice many other interesting birds, if our limits would permit us to enumerate them. It produces also very venomous *serpents*, *ants*, and *termites*, in great abundance, devastating *locusts* ; and towards the north, in the portions but little known, the terrible *tsestse* fly, whose sting is irremediably fatal to oxen and horses. The cattle, after being stung, languish and die in the space of from eight days to three months, according to the number of wounds they have received.

Population. — The inhabitants of this plateau belong to two very different families of men, the Hottentots and the Caffres, concerning the latter of whom we shall soon have occasion to speak more particularly. To the former race, whose features seem to approach the Mongolian, belong the *Namaquas*, the *Koranas*, and the *Bushmen*, who occupy, from west to east, all the south of the plateau. To the Caffres, on the contrary, whose form and features bear more affinity to those of European race, appertain the most numerous inhabitants of these countries. The *Bechouanas*, subdivided into a great number of colonies, such as the *Bassoutos*, the *Barolongs*, the *Batlapis*, &c.

The Bechouanas are a lively race, intelligent, and remarkable for their good humor. They are very well formed, have fine eyes and teeth, short and woolly hair, and a dark copper complexion. They live, with their chiefs, in *kraals*, or villages ; their huts are of circular form, and covered with long grass ; the floor and walls are washed with a mastic, composed of chalk and refuse matter ; the entrance is three feet in height and two in width ; each dwelling is surrounded by an osier fence, while a tall hedge of thorns forms the enclosure of the kraal, and protects the inhabitants from lions and other carnivorous animals.

The apparel of the men consists of a *kaross* and a *tsecha*, both

made of the skins of beasts. The former is a mantle, which they throw gracefully over their shoulders ; the latter covers their loins. They wear on their feet sandals of buffalo or giraffe skin. Besides necklaces, they suspend around their necks numerous amulets, which they esteem preservatives against all evil. Their arms consist of a buckler of buffalo or giraffe skin, a battle axe, a club, and a bunch of *hafsagais*, or javelins, six feet in length, which a skilful warrior plants in the body of his enemy at a very great distance ; the greater part are now provided with muskets. The women wear, like the men, a kaross, and a short robe of antelope skin ; their necks and arms are loaded with long chains of colored glass. The men are occupied with the care of the cattle, making war, and hunting, or preparing skins. They leave to the women the cultivation of the fields and gardens, as also the labor of the harvest and the grinding. A man may have as many wives as he can buy. Among the wealthy tribes, a father only bestows his daughter upon a son-in-law who can give him in exchange at least ten head of cattle. However, although polygamy is allowed by law, it is rare in point of fact, except among the chiefs and heads of the people.

For centuries incessant wars have laid waste and stained these plains with blood. Even in our day one cannot travel there without having his soul saddened by the sight of innumerable towns or villages in ruins, and of heaps of human bones, scattered here and there. Incessantly threatened by the teeth of wild beasts, by thirst, or by famine, man found in his fellow-man an enemy a hundred times more to be dreaded. Many tribes became cannibals, and feasted with delight on human flesh ; deformed children were exposed to ravenous beasts ; old men were frequently abandoned in the desert, and unnatural parents might often be seen burying alive a little infant, whose mother was dead, or whom they believed themselves unable to rear.

But within forty years, since English, German, and French evangelical missionaries have introduced among these unfortunate populations the knowledge of the gospel and Christian civilization, great changes have taken place in the social condition of all the inhabitants of the southern portion of the high plateau of Africa ; many thousands have become Christians, through a

sincere conversion, and are members of churches replete with activity and zeal ; the missionaries have every where established schools, and already, in many places, the generation who have received their instructions have attained to active life, and are strenuous in promulgating Christian civilization. The influence of the churches and their pastors extends even to those natives who have not yet abandoned idolatry. The greater part desire to be instructed, to wear garments, and construct themselves houses, after the models of civilized nations ; and cannibalism, shocked at itself, has almost entirely disappeared.

In Africa the high plateau is not, like that of Asia, surrounded by vast plains ; it inclines towards the sea, by a succession of terraces, which may be regarded as secondary plateaus, or dependencies on the central plateau.

2. SOUTHERN TERRACE, OR TERRACE OF THE CAPE. — This terrace is subdivided into two others, very different in vegetation and aspect ; the *terrace of the Cape*, properly so called, or *maritime terrace*, at the south, and that of the *Karroos*, at the north.

The Karroos, which border almost all the high plateau, at the south of the Nieuwveld chain of mountains, are plateaus destitute of rivers and trees, with a clayey and reddish soil, which, under the influence of the heat of summer, becomes almost as hard as tile. During the dry season, all vegetation is suspended in the Karroos ; the unctuous plants only preserve a vestige of verdure. But as soon as the rains descend, these plains are robed in dazzling green ; thousands of beautiful flowers burst into blossom, and fill the air with their perfumes ; antelopes and other game descend from the neighboring mountains, and the colonists bring thither their cattle from all quarters. No disputes arise concerning the possession of these natural prairies, for they are vast enough to satisfy the wants of all ; the colonists only approach each other to hold pleasant converse, and to strengthen the bonds of friendship which unite them. But the magnificence of the Karroo lasts scarcely a month ; the sun has very soon withered the plants ; the desert reappears on all sides, and men and animals are obliged to abandon these places, which become henceforth uninhabitable.

South of the Karroos, and separated from them by other chains of mountains parallel with the Nieuwveld Mountains, is

situated the *maritime terrace of the Cape*, the best cultivated portion of Southern Africa.

The aspect of this country is generally severe: barren mountains presenting the form of tables; great spaces covered with sandy steppes, in the midst of which cultivated spots form, as it were, a kind of oases; rivers destitute of water during a great part of the year; and every where, in a word, an *African aspect*.

The climate is one of the best in the world; and in this respect the possession of Cape Colony is invaluable to England, which makes use of it as a place of recruit for invalids, especially for the sick, who come from the hot and unhealthy climates of India. The only drawback to this climate is its frequent droughts, whose effects the colonists seek to counteract by paying much attention to the canals for navigation.

Vegetables.— From the colonies of the Cape are exported



Bruyere.

to us some of the most magnificent plants which adorn our green-houses and gardens, among others exquisite heaths, sweet scented geraniums, the iris, and unctuous and bulbous plants of every kind. Nevertheless, the vegetation of these countries satisfies neither the eyes nor the taste of a European; no tufted grass, no forests, meet his view; only clusters of trees without freshness or depth of shade.

A plant which grows abundantly in the arid and dry soils of



Aloes.

these regions is the *aloe*, which is cultivated for the sake of the juice with which it is impregnated. This gummy, resinous sub-

stance is sometimes extracted by making incisions at the base of the leaves, sometimes by cutting them in fragments and boiling them. The juice of the aloe is of a yellowish red, and is very much employed in medicine, and in the veterinary art. In the unenlightened times of the middle ages, elixirs were concocted of it, which, it was said, would wonderfully prolong the life of man.

The soil naturally produced neither cereals nor fruit trees; but the Dutch and English colonists have long since introduced the cultivation of our vegetables, grains, and best fruits — orange, lemon, and apple trees, maize, barley, millet, and wheat, besides a considerable number of the productions of India. The *wheat* of the Cape is accounted the heaviest and the best in the world, and in this respect the fertility of this colony renders it an abundant granary for the sailor, and for the other English colonies. The cultivation of the vine was introduced into the Cape by Protestants, whom the repeal of the edict of Nantes by Louis XIV. had banished from France, and the Lunel and Frontignac wines, which are exported thence, are almost equal to those from which they took their origin. As for the famous Constance wines, which are obtained from plants brought from Shiraz, in Persia, they possess a flavor which is met with in no French wines. The animals, however, are the most prominent feature among the productions of Cape Colony.

Horned and wool-bearing cattle are found there in very great profusion, and the cattle owners are in possession of the greater part of the country; some possess from 500 to 600 oxen, and as many as 4000 or 5000 sheep. The wools of the Cape, similar to the merino wools, are reputed excellent, and are more and more in demand in European markets. The horned cattle furnish a renowned butter, and a great quantity of hides.

Lions and other wild beasts of the same nature long ago disappeared before the steps of the colonists. Troops of monkeys (among others the *cyrocephale choema*) are the scourge of the gardens and orchards. They usually practise their thefts by night; some act as sentinels, others penetrate into the enclosure; and the remnant of the band, ranged in single file extending to a place of refuge, pass from hand to hand the stolen goods.

Another very pretty animal, which makes considerable havoc in the fields of the natives, is the *jerboa*, a large species of rat, which, issuing from its hole by night, gnaws with its sharp teeth the finest millet stalks. The fore feet of this animal are too short to enable it to run, or clear a wall; it can, however, in a smooth field, leap great distances, and thus justifies the epithet of *springer*, which has been given it in the country.

The arid and desert regions of the colony contain also many *serpents*; among others the *horned snake*, so called on account of a kind of thorn, or slender and pointed horn, which projects above each of its eyelids. Ancient authors would explain the use of these horns by informing the reader that when it crouches in the sand, the malicious serpent displays them above the surface in order to serve as a bait to the birds, which mistaking them for small worms, approach to devour them, and are immediately seized by the crooked teeth of the reptile. It was evidently to these habits of the horned snake that the prophecy pronounced by Jacob relative to one of his sons had reference: "Dan shall be a serpent by the way, an adder in the path, that biteth the horse heels, so that his rider shall fall backwards." (Gen. xlix. 17.)

But Providence has bestowed upon these countries a precious bird for combating these dangerous reptiles, namely, the *secretary*, so called on account of the long, stiff feather which it has behind its head. This bird, which is, moreover, quite large, attacks and vanquishes serpents without other weapon than its wings. The menaced reptile erects itself, and darts forward; but the secretary, expanding one of its wings, spreads it before him, shielding himself with it as with a buckler; and while the serpent unsuccessfully exhausts its venom in biting insensible feathers, it deals him with the other wing such vigorous blows, that soon the benumbed reptile staggers, falls, and is devoured by its enemy. Some persons in the Cape rear this bird to destroy the lizards, serpents, and rats which infest the poultry yards.

The population is yet inconsiderable; an extent of country equal to one half of France is occupied by only 250,000 inhabitants. The *whites*, who compose half of this number, are chiefly descended from the Dutch, who were the first to establish themselves in this country. The English, who are now the masters of

this vast territory, are far less numerous. The colonists, according to the nature of their occupations, are divided into three classes; the *vine dressers*, the *agriculturists*, and the *boors*, peasants who are engaged in the rearing of cattle, and in whose service the natives are employed. They impatiently endure the yoke of England, especially since she has abolished slavery. Some, even, in order to escape from this dominion, have established themselves at a distance, in those regions of the high plateau, which are but little known, where they have dispossessed and cruelly tyrannized over the natives. These enterprises of the boors have been the principal cause of the wars which have recently imbrued these countries in blood.

The colored population is composed both of *Malays*, transported thither from the south-east of Asia, in order to be employed as free laborers in the cultivation of the lands of the colony, and of *Hottentots*, who are the ancient possessors of the soil. Although of the negro race, the Hottentots resemble extremely, in the pyramidal form of their head, the populations of the Mongolian race; they have prominent cheek bones, oblique eyes, a broad and flat nose, a yellow and somewhat reddish complexion, and short and woolly hair. Their name is probably derived from their language, which is hard, broken, and replete with strong aspirations and guttural articulations, seeming to convey only to the ear the syllables *hot-en-tot*. These men, good natured and mild, but apathetic, and too much addicted to strong drink, have been relieved by the English from the oppression under which they had so long groaned; and now dispersed over the whole territory, they render themselves very useful to the colonists, watching their flocks, driving their vehicles, and cultivating their gardens and lands.

As regards religion, most of the whites are Protestants; the Malays are Mahometans, and the Hottentots generally idolaters. Nevertheless, missionaries have within some years obtained great advantages among them. They compute among the Hottentots a considerable number of flourishing churches and well-attended schools. Most of the parents evince as much ambition as those of European countries in having their children taught to read, write, and recite passages of the Holy Scriptures. And as is

every where the case, civilization goes hand in hand with religious progress. The Christian natives are better clothed, the number of their flocks increases, and their granaries are well stocked with millet and barley.

3. TERRACES OF THE EASTERN COAST. — The plateau of Africa slopes on its eastern side by one or more terraces, as yet but little known, and bearing different names.

(1.) *Coast of Natal, or Caffraria.* — The aspect of this coast, which is quite narrow, (only about 30 leagues in width,) is very different from that of Cape Colony. Caffraria is a country well supplied with water, rich in perpetual verdure, with fine forests, and rich pastures, favorable to the increase of cattle.

The *climate* is healthy and mild, and much less exposed than that of the Cape to the scourge of the drought.

The *vegetation* is flourishing and vigorous. The forests, interwoven with parasitical plants, and with cactuses of fantastic form, consist generally of a kind of thorny copse, where the Caffre, who creeps or glides like the serpent among these inextricable thickets, finds a sure refuge both in times of peace and of war. He rushes thence upon his enemies, or upon the farmers' flocks, and sheltered in this inaccessible fortress, he defies the power, discipline, and skill of the European. Thus it may be easily understood how the late wars in these countries have been so disastrous to the soldiers and the English colonists. The cultivated plants, are principally *millet* or *caffre wheat*, *maize*, *barley*, *tobacco*, and different vegetables.

The *animals* are for the most part the same as those of the plateau — *antelopes*, *lions*, *panthers*, *elephants*, *jackals*, *ostriches*, &c. In the forests the *African buffalo* is also frequently encountered, whose gigantic horns, at the base a foot in width, and diverging horizontally from the head, overshadowing the eyes, give the animal a ferocity of appearance difficult to describe. The Caffres hunt them both for their flesh, which is very savory, and for their skin, of which they make excellent leather straps. But this hunt is dangerous, and requires much hardihood and presence of mind.

Another formidable inhabitant of the dense forests of this country is the *masked wild boar*, so called on account of four

protuberances which project from its face, above and below the eyes, and give it a truly hideous aspect. It is provided with tusks which are sometimes a foot in length. It is a fierce, untamable animal, of a natural ferocity, an encounter with which is sometimes very dangerous.

The *inhabitants* resemble the negro race in their crispy hair and black skin, but compare with the Europeans in their lofty stature, the regularity of their features, and the elegance of their forms. They are generally nomadics; they cultivate the earth a little, but subsist principally by their flocks. Their towns are little more than vast camps, which they quit or transport with great facility. Cattle take the place of current money; 10 oxen, for instance, constitute the ordinary sum which a man must pay to his father-in-law as the price of the woman he marries.

The Caffres are now almost universally provided with horses and muskets, whilst at the close of the last century they still galloped about on their oxen. They had neither sheep nor goats,



Caffre.

of which they now possess immense flocks. They work with much skill in copper and iron, and manufacture beer, bread, and different kinds of pottery ware.

Although idolaters, the Caffres practise circumcision. They

have, like the Bechouanas, sorcerers, or *rain makers*, whom they believe to have power to conjure the elements. If, notwithstanding the offerings presented to the priest, rain does not follow, he attributes this circumstance to some unfortunate individual, whom he accuses of magic; and generally the chief arranges with the priest that the denunciation shall fall upon some one whose wives or flocks are coveted by the former. The Caffres are very cruel. They have the barbarous custom of exposing their infirm and aged parents to the fangs of wild beasts. Others, who are cannibals, are said to fatten their parents in order to devour them. The English, German, and American evangelical missionaries, who have established themselves among these savages, have already obtained encouraging successes; but the recent wars have undoubtedly retarded these growing works.

(2.) The *Coast of Sofala* and *Mozambique*, as likewise the *Terrace of Monomotapa*, in the interior, are still too little known to enable us to describe them. From the former, however, considerable quantities of ivory are obtained, and from the latter an abundance of *gold dust*. The Portuguese still possess, on its coasts, some feeble establishments, now rapidly going to decay, as is also the case with the missionary stations which they had founded there.

(3.) The *Coast of Zanguebar* and of *Ajan* is still less known. It is dependent upon a prince of the eastern coast of Arabia, the Imaum of Muscat.

4. NORTHERN TERRACE, OR TERRACE OF LOWER SOUDAN. — These regions are also very imperfectly known, no European traveller having penetrated beyond the fourth degree of north latitude.

Climate. — Two seasons only are experienced in Soudan — the *rainy* and the *dry season*. The duration of the former is three or four months, but it does not rain uninterruptedly during all this time. There are often intervals of fine weather of from 24 to 30 hours. But soon the rain recommences, with such violence, and in such abundance, that it threatens to engulf or sweep away every thing. This season is especially unhealthy to Europeans, of whom three quarters, at least, sink under its influence.

Minerals are not abundant. Gold is obtained in certain places

by washing the sands which contain it. *Salt* is generally wanting. The poor people are obliged to supply this deficiency by water in which ashes are infused, and which is excessively bitter. In many parts of Soudan, cakes of salt are equivalent to golden ingots, and the privileged countries, which, like Darfoor and Kordofan, possess quarries of it, are visited every year by numerous caravans, which bring gold and slaves to exchange for the precious commodity.

The cultivated vegetables are chiefly *millet*, *maize*, *kidney beans*, *gourds*, and a little *wheat*. In Soudan also are found *palm*, *fig*, *mimosa*, and *ebony* trees. But the two most remarkable plants with which Providence has endowed this country, and which conduce to the health of the inhabitants, are the tamarind and the *sterculia*.

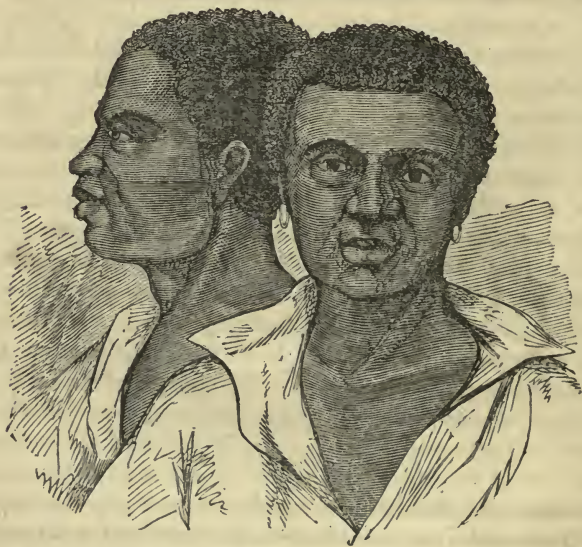
The *tamarind* is a tree of the size of our largest chestnuts, and its foliage, similar to that of the acacia, but thicker, affords the traveller a precious shelter from the heat of the sun. Its flowers form beautiful yellow, hanging clusters; its fruits, which are the most important part of this plant, are composed of thick pods, a little bent, like those of certain beans, and filled with a soft and glutinous pulp, in which are lodged small black seeds. Before their perfect maturity, these fruits are very acid, and the natives make use of them instead of vinegar for giving a relish to their food. When ripe, the pulp has a very agreeable taste, at once tart and sweet. It may then be eaten as a sweetmeat, but it is employed especially in the form of refreshing drinks, for counteracting dysentery and the various dangerous fevers of these climates. This same substance, suitably prepared, is also exported into Europe for medicinal purposes, and is used in bilious fevers and other irritations of the stomach.

The *sterculia* is a tree whose fruit resembles the chestnut, and grows in clusters of 12 or 15 nuts, 4 or 5 of which are contained in one shell. The negroes enjoy eating this fruit before their meals, not on account of its taste, — for it is of a tart and pungent nature, — but owing to a property which it possesses of enhancing the flavor of any thing they may subsequently eat or drink. It is particularly on liquors, and more especially on water, that this effect is most sensibly manifested. After chewing the

gourou or *kola nut*, (as this fruit is called,) the most brackish water acquires an agreeable taste; but this effect only lasts while the roof of the mouth retains the tartness of the kola. The negroes of the Soudan chew it incessantly, and it is the principal present which they make to strangers whom they wish to honor.

The *animals* are very nearly the same as those of the plateau — lions, elephants, giraffes, zebras, ostriches, &c. Many cattle are raised there. Oxen, with a bridle passed across their nose, are used for riding in almost all these regions; the rich have horses and dromedaries.

The *population* is composed of vigorous negroes, who walk bareheaded beneath the hottest sun, and anoint their bodies with



Negroes.

the fat or marrow of oxen. The women wear gold bracelets on their feet and arms, and a ring of the same metal in the nose, and in the upper part of the ear. Many of these negroes are cannibals, who fatten their prisoners and eat them, if they cannot sell them to advantage.

Nothing can be more odious than their mode of procuring these prisoners. Several chiefs usually concert together to undertake in common a *man hunt*. On the day fixed, they speedily betake themselves to the mountain which they have resolved to surprise. Under cover of the night, they surround the villages, set fire to the houses, put to death those blacks who offer resistance, and make captives of all the rest — men, women, and children. When



Negroes driven into Slavery.

any among the prisoners are found to possess superior strength, the victors make long wooden forks, and in the space between the branches, cramp the neck of the captive, who, thus impaled, would in vain attempt flight. They then proceed to sort them, and form them into caravans, despatching them even beyond the borders of the Mediterranean, into Egypt and Persia. Many thousands perish in crossing the vast deserts which separate them from these remote countries. A little half-cooked dough, or a handful of maize, constitutes the nourishment of these poor

wretches in the desert. And if one of them, becoming sick and exhausted, is unable to continue his march, he is consigned to some station until he is cured and fattened, in order that he may afterwards be disposed of more advantageously ; but if the caravan is remote from any habitation, the slave is abandoned on the spot, and dies of starvation, or becomes the prey of some wild beast. However, as the driver is bound to give an account of his merchandise, he seizes the slave, and in spite of his cries cuts off his ears, which he salts, in order to preserve and exhibit them when he renders up his accounts.

5. WESTERN TERRACES, OR CONGO. — The general aspect is that of a country sandy and flat on the coasts, and very elevated in the interior, where the extremely fertile soil yields two crops a year.

The *climate* is excessively hot during the day, but the nights are cool ; there are but two seasons, the wet and the dry ; snow is never seen there. Minerals do not seem to abound.

The *vegetation* is rich and varied. Wheat, maize, rice, millet, tobacco, and especially *manioc*, are cultivated. This last shrub, originally from America, is remarkable for its large, fleshy root. This root, like every other part of the plant, contains a principle pernicious through its tartness and its venomous properties. But as it easily evaporates, it may be extracted by subjecting the substance to a powerful heat. The root is first grated, then forcibly pressed in bags, in order to separate from it the noxious juice, which entirely disappears, when, after a few washings, this paste is exposed to the sun. As soon as it is well dried, it is spread on polished plates and heated. A kind of biscuit is thus formed, which is never attacked by worms, and which, kept dry, may be preserved a long time. This is called *cassava bread*. Soaked in water, this cake swells considerably : half a pound is sufficient for the daily sustenance of a man. When the roots are scraped, there settles at the bottom of the vessel a sediment remarkable for its purity and whiteness. This substance, known in Europe by the name of *tapioca* or *manioc farina*, is used for making creams, light pastry, soups, and jellies, which are easy of digestion. The *banian fig tree*, which is not diffused in Africa as in India, is, however, found in Congo : one of them may be seen

in the square of every village, and beneath the shade of its venerated foliage are held the assemblies in which public affairs are discussed. But the most remarkable tree of Congo, as also of Soudan, and of the northern part of the plateau of Upper Africa, is the *baobab*, the giant of the vegetable kingdom. The trunks



Baobab.

of some of them are even 100 feet in circumference, and their branches, bowed by their enormous weight, sometimes descend even to the earth, forming (so to speak) an enormous clump of verdure. It would appear also that this colossal tree may attain an extraordinary old age; certain specimens, it is said, could have lived no less than 4000 or 5000 years. The fruit known by the name of *monkey bread*, because these animals are, it seems, very fond of it, resembles a small oblong gourd. The *bark* of this fruit, which is quite thick and hard, is used for making vessels of every kind. The white, sweet, and somewhat tart pulp, which is found in the interior around the kernel, is eaten, or made into a lemonade, which is one of the most efficacious remedies for the dysentery — an affection so much to be dreaded in these hot climates, owing to its rapid progress. By burning these fruits and boiling the ashes with palm oil, an excellent soap is manufactured. Of the filaments which the bark of the tree contains are made ropes, sacks, and cloth for the use of the poor. The wood is too soft to be useful; usually, indeed, all the interior having gone to decay, the tree is left perfectly hollow, and sometimes an abundance of water accumulates in its

trunk: more than a hundred men, we are assured, could be accommodated in the cavity of one of these giant trees. Thus every part of the plant is rendered useful, and in times of famine not only its fruits, but likewise its leaves, are eaten. Independently of every thing else, the baobab affords an invaluable shelter to the natives, both from the heat of the sun and from the rain and storms.

The *animals* appear to be the same as those which have been designated on the high plateau.

The *inhabitants* belong to the negro race. The Conques are almost all idolaters. There exist, however, among them, Catholic missions, which have extended their civilizing influence over a considerable portion of the natives. They are under the protection of the Portuguese, who founded them in the 19th century, and who have always the mastery of a portion of this vast country. As for the independent Conques, their idolatry is that of fetishism; that is, the worship of animals, trees, rocks, &c., accompanied by sanguinary festivals and human sacrifices.

6. PLATEAU OF ABYSSINIA.—At the north-east of Upper Africa, between the Mountains of the Moon and the Red Sea, rises a picturesque and hilly country, surnamed, on this account, the *African Switzerland*: this is *Abyssinia*. This country is a collection of plateaus, separated from each other by chains of mountains, the principal of which are, at the west, that of Amhara, which is the highest; at the south-east, that of Shoa; and at the north-east, Tigré, which is an elevation of 9000 feet.

Aspect.—Nothing can be more variable than the aspect of this country. The soil generally bears the impress of violent volcanic convulsions. The scene is constantly changing from rocky or desolate places to valleys or plains of a magnificent verdure. Every where against the horizon appear mountains of fantastic forms, some resembling tables, others towers, or gigantic ramparts, and which can only be ascended by the aid of ladders and ropes.

Climate.—From this diversity in the elevation of the soil necessarily results a great variety of climates. The most elevated plateaus—little wooded, but covered with herbage and

cultivation — enjoy a temperate climate ; the nights are cool, and the productions similar to those of Europe. In the low countries, where the vegetation is superb, and the soil extremely fertile, the climate is, on the contrary, excessively hot, and much less salubrious. The middle lands participate in the advantages of both climates. There are but two seasons in Abyssinia, the *dry* and the *rainy season* ; the latter commences in April and ends in August. During this season the morning is usually fine ; in the afternoon the sky becomes overcast, and the rain descends in torrents, accompanied by thunder and lightning ; there is snow on the high mountains.

Minerals. — *Gold* and *iron* are found there. Salt serves in Abyssinia for current money. It is obtained from a vast plain, which one would take at a distance for a field covered with snow or ice. The Abyssinians detach this salt in sheets of a foot in length, three inches in thickness, and as many in width ; it is the most frequent medium of exchange in commerce ; 35 of these sheets are worth a talau, or silver coin of 60 or 70 cents. In important transactions, use is made of pieces of gold an ounce in weight.

The *vegetation* differs widely, according to the relative height of the different portions of the country. Pastures destitute of trees, but well watered, and fields carefully cultivated, occupy the highest plateaus. There are found maize, barley, millet, wheat, and a grain peculiar to Abyssinia, and which is known by the name of *teff*. This grain, that is scarcely the size of a pin's head, yields a farina of which excellent bread is made, and is in general use in this country. To make their *tabeta*, (or bread,) the Abyssinians dilute this farina in a quantity of water, and leave it near the fire until it ferments ; the dough, moulded in round cakes, is spread upon a platter of baked earth, and when penetrated by the heat, is immediately removed. It has then the form of our pancakes, and constitutes a light food of excellent quality, but a little tart. The *teff* possesses the valuable property of growing with great rapidity ; in damp places it yields as many as three crops a year. Its produce is also very abundant ; in good years, the seed of the *teff* multiplies 40 fold.

In the lowest countries are found, in abundance, *mimosas* ;

among others, that which produces the gum arabic; *cotton trees*, whose down is reputed excellent; *sugar cane*, the *tamarind*, the tree which produces incense, and the *coffee tree*, which seems indeed to be native to these countries, whence it has carried into Arabia and throughout the world the name of its primitive country, Caffa, (coffee,) situated at the south of Abyssinia.

On the middle terraces is encountered an extremely rich and diversified vegetation — almost all the plants of Southern Europe, orange and lemon trees, vines, &c., and others wholly peculiar to Abyssinia. Among the latter may be mentioned the *colquall*, a



Colquall.

great euphorbia, which attains as many as 40 feet in height, (while ours are only small plants,) and which has a very singular form. Its branches, wholly destitute of leaves, diverge from the trunk like those of a great candelabra; in its flowering season, each of them is terminated by a beautiful flower, of a golden yellow, which afterwards gives place to a triangular crimson fruit. These extraordinary plants were growing in such abundance on the side of a certain mountain, when crossed by the English traveller Bruce, that its slopes, viewed from a certain height, appeared to be covered with a rich carpet of purple and gold.

The juice is obtained by means of incisions made in the trunk; and rags, after being saturated with it, are rolled up and made use of as torches. This juice is very stinging; the smallest quantity, introduced into the eye, produces an extremely acute inflammation, and sometimes even, although rarely, occasions the loss of sight.

But of all the productions by which the Creator has manifested his bounty and wisdom to the inhabitants of these countries, none is more remarkable than the *coupo*. The Abyssinians, children and adults, are all subject to the sufferings caused by the *tania solium*, or *long tape-worm*, which, like a long white ribbon, develops itself in the body of man, and sometimes its length is enormous. For counteracting the ravages of this animal, Providence has bestowed upon Abyssinia the *coupo*. This tree, which forms every where little groves, and rises 15 or 20 feet in height, is covered with a profusion of clustering flowers, which the inhabitants dry, and reduce to powder by carefully grinding them. In order to benefit by the use of it, they swallow (fasting meanwhile) a handful, diluted in a vessel of water, which ultimately has the effect of expelling the greater part of this worm. Unfortunately it soon grows again, obliging them about every two months to have recourse to this same remedy. This malady, which even attacks foreigners, presents otherwise no serious danger. The *coupo* is also beginning to be much employed in Europe as a *vermifuge*.

The *animals* are extremely numerous and various in Abyssinia. In the rich pastures of the high plateaus are found great numbers of all our domestic animals; among others, *oxen with gigantic*

horns, of which cups and bottles are made ; *sheep with very long wool*, and whose skin, suitably prepared, is generally used for the clothing of the peasantry ; small but active *horses*, *asses*, and *mules*, which serve for beasts of burden. All Abyssinia abounds in domesticated or wild *dogs* and *monkeys*, of which troops of many thousands are sometimes encountered. The lion, panther, elephant, and rhinoceros are not rare. The *hyenas*, with whose howls the air incessantly resounds, are very bold ; they perambulate by night even the streets of the large towns, and multiply indefinitely, owing to the superstition of the Abyssinians, who believe that under this guise are concealed Jewish sorcerers, and who on that account dare not chase them. *Locusts* often ravage Abyssinia ; but another animal, much more to be dreaded, notwithstanding its diminutiveness, is the *saltsalya*, a venomous fly, which issues by thousands from the low and damp soils, at the commencement of the rainy season. As soon as their hoarse buzzing is heard, men and animals flee in every direction. The *saltsalya*, attaching themselves to the latter, pierce them with their formidable stings, and often allow them no respite until they expire of rage and agony. The camel, whose patience is proverbial, becomes intractable when exposed to the stings of this insect ; the elephant and rhinoceros, in spite of the thickness of their hides, can only escape it by rolling themselves in the mud, which, adhering to their skin, and hardening in the sun, supplies them with an additional cuirass. Every year the shepherds on the eastern coast are compelled to retreat with their flocks before this terrible little enemy, and to seek a refuge in the high plains of the interior, until the rainy season is past. It was then not without reason that the prophet Isaiah (viii. 18, 19) made use of the image of these Ethiopian flies in describing the desolation which the hostile armies would inflict upon Egypt.

An animal of which we should say a few words, on account of the importance of the products which it furnishes commerce, is the *civet*, a quadruped which, like the chevrotain musk, secretes in a double pouch, placed under its tail, a sweet-scented and unctuous substance, very much used among the Orientals for perfumery, and somewhat employed elsewhere as a

medicine. This animal, which is larger than a cat, may be, if not tamed, at least encaged, and its pouches emptied two or three times every week with a spoon; it has been remarked that the more delicately it is nourished the more musk it yields. The Abyssinians export it annually into Arabia and the provinces of Northern Africa, to the amount of about \$200,000.



Civet.

Population.—The Abyssinians belong almost entirely to the Caucasian race. Those who inhabit the high plateaus have a nearly white skin; those of the low portions, on the contrary, are black, or almost black. They have generally a lofty stature, regular features, and long hair. The women, as in the rest of Africa, are burdened with all the heavy labors. The Abyssinians are not nomadics; the country is covered with isolated dwellings, villages, and towns. Their manners are mild, but extremely depraved; polygamy is not rare, and marriage is very easily dissolved. The Abyssinians are passionately fond of raw meat, merely dipped in pepper.

The prevailing *religion* is Christianity, but of a very degenerate character, and differing from that of all other Christian sects. They worship the saints and the Virgin, and practise both baptism and circumcision; but the baptism must be renewed every year, and on the 18th of January all the people immerse themselves in the rivers for this purpose. The Abyssinians subject themselves to rigorous fasts, and have many convents and hermitages. The Catholic missionaries, at first very well received in the 16th century, then totally banished, have latterly obtained the greatest success, whilst the Protestant missionaries have been expelled from all these countries, after a few years of struggling and futile efforts. There still exist in Abyssinia numerous remnants of ancient colonies of exiled Jews, who have until now preserved their laws, their language, and even their independence; they are hated by the Christians, who consider them all more or less sorcerers. Also, in this country are encountered numerous Mahometan populations, and others who are idolaters, as the *Gallas*, a vigorous and valiant race of negroes, who, issuing from the interior of Africa, have, within two centuries, completely disorganized Abyssinia by their invasions, and now occupy all the southern part of it.

7. PLATEAU OF UPPER SOUDAN.—This plateau, formed by the different chains of the Kong Mountains, extends first from east to west, then northerly. It is not yet perfectly known, although many travellers have crossed it in different directions, at the peril of their lives.

Aspect.—This is a hilly, uneven country, studded with mountains of but little elevation, which are partly arid and destitute of trees, partly wooded and covered with pastures. The traveller often penetrates immense forests, for centuries unimpaired by the axe.

The *climate* is much more healthy on the plateau than in the plains and on the sea shore. However, after the rainy season, many, especially among the Europeans, fall victims to fevers and dysenteries.

The only *minerals* at all abundant are, as we have already said, *gold* and *iron*.

Vegetables.—Besides the *butter tree*, of which we have pre-

viously spoken, should be mentioned, among the useful plants, the *canoe* or *down tree*, (bombax,) whose enormous trunk, skilfully hollowed by the negroes, may be used for making boats capable of holding fifty persons; the fruit of this tree is also accompanied by a down very similar to cotton. This country also produces a kind of long pepper, known by the name of *Guinea pepper*, or *malaquette*, and finally the tree which yields the *gourou*, or *kola nut*. The cultivated plants are *maize*, *wheat*, *millet*, *melons*, *ginger*, and especially the *yam*, that enormous tubercle, which, cooked in the ashes, constitutes one of the principal articles of food among the negro populations.

The *animals* are in no respect remarkable. They are domestic animals, horned cattle, horses, sheep, and goats, and formidable wild beasts, lions, leopards, elephants, &c.

Population.—The various inhabitants of Upper Soudan differ much from each other in respect to figure, religion, and civilization. Thus the *Mandingoes* and the *Foulahs*, at the north of the plateau, who are Mahometans, and resemble the whites much more than the blacks, are vastly superior in civilization to their neighbors at the south, among whom they zealously propagate Islamism. They have public and private schools, in which they teach the Koran of Mahomet, and their *mollahs*, or teachers, have already reached the borders of the Gulf of Guinea. They instruct in reading and writing Arabic, and, in exchange for the hospitality which they receive, they write for their hosts, with the reeds which serve them for pens, sentences of the Koran, which the negroes call *gris-gris*, and which they carry constantly about them as amulets or talismans against all accidents.

One of the most remarkable of these negro races, still idolatrous, among whom the Mahometan mollahs encounter Christian missionaries, are the *Ashantees*, established at the south of the plateau, a powerful and formidable nation, celebrated for their ferocity. At the funerals of the princes and the great, they slay hundreds of victims; after a victory over a neighboring people, that of the Fantis, 3000 persons (of whom 2000 were prisoners) were put to death. But since the establishment of the evangelical missionaries in the capital of this country, Coumassie, these atrocities have diminished. During the last annual festivals

instead of the torrents of human blood which formerly flowed on these occasions, a single man, a criminal, was put to death, and in the height of the festivities, hundreds of natives withdrew to take part in the religious services of the mission. There are already in the southern part of this country many zealous Christian churches, and the schools of the missionaries are highly appreciated.

8. PLATEAU OF BARBARY. — The *plateau of Barbary*, or of the *Berbers*, is comprised between the Little Atlas at the north, the Great Atlas at the south, and the Upper Atlas or Daran at the west. It is filled with plains and valleys, and its aspect is extremely varied.

The *climate* which reigns in the region of the Atlas is one of the finest in the world, especially on the western declivity, (Maroc,) which the high summits of the Daran shelter from the scorching winds of the desert. The heat is only insupportable in Barbary when the south wind, or that of the desert, (simoom,) prevails, which blows only 3 or 4 times a month, and rarely for more than 24 hours. Then the heat is extreme; one experiences pains in the head, lassitude in every limb, and difficulty in respiration. Except during the prevalence of the simoom, the heat is not overwhelming, especially to those who do not drink too freely, and perspire but little. The rainy season constitutes the winter, but the rain does not then fall uninterruptedly. The winter lasts only from November to the end of January; towards the 15th of February the vegetation is in full activity, and in the commencement of March the first fruit gathering is made. In all seasons the nights are cool, and the raw fruits unwholesome for Europeans.

Minerals. — The high country of the Atlas contains mines of iron, lead, salt, and very considerable veins of copper, the most important of which are in Algeria.

Vegetables. — The influence of a hot but not scorching temperature gives great force to the vegetation. In certain parts of the plain, the grass grows nearly as high as a man's shoulders; the olive trees are as fine as the European oaks; the orange and lemon trees are hardly inferior in size to some of our finest fruit trees. But although this vegetation has many points of resemblance to that of Southern Europe, it still differs sensibly from it

in the production of particular vegetables, of which we have not yet had occasion to speak. Such is the *cactus-racket*, or *fig tree* of Barbary, which every where forms thick hedges, rising 12 or



Cactus.

15 feet in height. This is a fleshy plant, covered with prickles, whose interlaced racks, which were at first broad leaves, lose their form on growing old, and finally become hard and knotty branches. The cactus is among the blessings of Providence in the hot countries; it furnishes shade, and without cultivation produces refreshing fruits. These fruits, which resemble a large fig, serve for the food of the Moors and Arabs during 4 months of the year. Other hedges, formed by *agaves*, present to the eyes of the traveller a truly magnificent and imposing appearance. The long, pointed, and denticulated green leaves of this American plant (analogous to that of the aloes, p. 182) resemble palisades interwoven with each other, to defend the approach of a military post; from the midst of the tufts majestically rises a stalk, which grows with great rapidity, and which, when it is adorned with yellow flowers, erects its head above that of every other tree. The fibres contained in the leaves furnish an excellent flax, which is called *vegetable silk*, and of which the inhabitants manufacture very valuable tissues. The marshy places, the beds of streams, of rivers, and even those of torrents, which are found dry during the greater part of the year, are filled with *oleanders*. These shrubs, in flower during the summer, present the most smiling aspect in the midst of the wildest scenes.

A curious vegetable, frequently to be met with in the midst of the thickets which characterize these regions, is the *dwarf date*, or *chamærops* palm tree, rarely growing more than six feet high, and the fruit of which the Arabs eat, although it is somewhat tough, and contains a very large stone. When this shrub is young, the heart of it is extremely tender, and is then eaten by the Abyssinians, raw or cooked; much of it is sold in their fairs or markets. We should mention two plants which are especially peculiar to the eastern part of the high country, (Tunis and Tripoli,) and these grow wild, although their fruits are perhaps more savory when they ripen in fields or gardens; these are the *carob* and *jujube trees*. The former, a tree of middle size, with large leaves, has for its fruit long pods, the interior of which is filled with a very nourishing pulp, of a mild and sweet flavor. The country people, and especially the children, consume great quantities of it.

The *jujube* is a small tree of 15 or 20 feet in height, whose smooth, reddish fruit, of the size of an olive, and containing a bony kernel, presents a firm, sweet, and very agreeable meat. These fruits, which are exported to us, after being dried in the sun, are used in the preparation of soothing diet drinks. They are also employed in the composition of numerous pastes, called *pectorals*, and among others in the *jujube paste*, in which they are mixed with gum arabic, which certainly constitutes the most efficacious part of them. Reference is had to the jujube in the wonderful accounts which certain ancient writers have bequeathed us relative to the *lotus*, on which the populations of the Cyrenaica, a small country at the east of the Great Syrtis, and bordering on Egypt, almost entirely subsisted.

As for the vegetables of Barbary, which are found in the south of Europe, or with which we are familiar, oranges, lemons, dates, bananas, pomegranates, figs, almonds, melons, tobacco, and cotton, we will only say concerning them, that the *dates* and *bananas*, besides being scarce, are much less savory than in the more southern regions; that under the action of an intelligent and skilful cultivation, *oranges*, *tobacco*, *cotton*, (recently introduced,) and some other new plants, promise to assume a very high commercial value in the French part of Barbary; and, that these

countries, which were, at the time of the Roman empire, the *granary of Italy*, are still very fertile in wheat. The inhabitants preserve it many years in *silos*, great pits, dug in the earth, in dry places.

Animals.—In treating of the Atlas, we have already mentioned the most remarkable animals—lions, panthers, lynxes, quepards, bubali, gazelles, monkeys, hyenas, and jackals. Almost all our domestic animals are found there: the horses are excellent; the asses and mules are used with the saddle; camels are employed in the transportation of burdens, instead of vehicles, of which the natives make no use; sheep and horned cattle compose the principal wealth of the Arab tribes. *Chameleons* are very frequently encountered in the hedges and thickets. They remain motionless on the branches of trees and bushes, rolling their great eyes in every direction, on the lookout for insects, which they seize with their long tongue without stirring from their place. They are very easily tamed. Game abounds in Barbary, where



Chameleon.

among others, is found the *hen of Numidia*, (ancient name of Algeria,) or *pintado*, so called on account of the regularity of



Pintado.

the spots of its plumage, which seem to have been designed by the hand of a painter. This species of hen, whose flesh in the wild state is very delicate, may be easily tamed and fattened in our poultry yards. The Romans made great account of it.

The *population* is composed of very different elements. First, the *Berbers*, or *Kobyls*, who have given their name to the country,



Abdel Kader.

and chiefly inhabit the mountains of the Atlas; the Berbers are the most ancient inhabitants of Northern Africa; they are of a brown complexion and slender figure; then the *Arabs*, who have been established in this country since the period when they came hither to spread abroad the religion of Mahomet; their language, which is also that of the religion, preponderates throughout Northern Africa; they are, as every body knows, remarkable for their leanness, their thin nose, and the regularity of their features.

The *Moors*, who principally inhabit the cities and occupy themselves with commerce, are a mixture of Arabs and Berbers. In the eastern part (at Tunis and Tripoli) are found also a considerable number of *Turks*, the dominant nation, and who occupy the principal civil and military posts. All these populations belong to the white race, and are Mahometans.

Next come the *Jews*, in great numbers, confined (except in Algeria) in separate quarters, and compelled to wear a costume considered as a badge of the contempt with which they are overwhelmed; a considerable number of *negro slaves*, brought from the Soudan; and *Franks*, or Europeans, (*French, Spaniards, Italians*,) who naturally abound in Algeria, since this portion of the Barbary States, definitively attached to France under a treaty of peace, offers to European colonization the resources of an eminently fertile soil, and of a generally agreeable, if not salubrious climate. The great majority of these colonists are Catholics; some few Protestants. Up to the present time, their influence has been ineffectual in converting the Mahometan population to Christianity.

SECT. 4. PLAINS OF AFRICA.—1. *Sahara*, or the *Great Desert*. This immense plain, which is eight times as extensive as France, stretches from the plateau of Upper Soudan to that of the Atlas, and from the Atlantic Ocean as far as the Red Sea, or at least to the valley of the Nile. This is the largest desert in the world. The name of Sahara is given more especially to the northern border, which is composed rather of hilly plateaus than of plains. But it is erroneously represented by geographers as a country by itself, under the name of Beled-el-gerid, (or land of dates.) The pasturage is more abundant there, and the

cultivable spaces more numerous; but in the main it is almost wholly a barren and sterile country, and its inhabitants lead the same kind of life as those of the Great Desert.

The *aspect* of the Sahara is gloomy and desolate, but more varied than one would generally imagine. At the west, it presents only a low and sandy plain; from the sea, the shore is only perceptible at the moment of touching it, and this is undoubtedly one of the principal causes of the numerous shipwrecks, of which these inhospitable borders have incessantly been the scene. Towards the centre, the Sahara is tolerably hilly; sand hills intermingle with plains covered with flints. The eastern part, more commonly known under the name of *Desert of Libya*, is indeed a rocky rather than a sandy plain.

Like verdant islands dispersed in the midst of the ocean, certain moist valleys fertilized by natural or artificial wells, certain retreats known under the name of *oases*, have been disseminated by divine wisdom over the surface of the desert, like so many harbors, which alone enable the voyager to traverse these immense solitudes. The wells, carefully guarded (even in the uninhabited oases) and covered with skins or branches, in order to protect them from the sand borne thither by the winds, are furnished with a bucket and rope long enough to reach the water. Every one respects so useful an establishment, and when necessary, the chief of the oasis loses no time in making the needful repairs. The caravans depend upon these wells for renewing their supplies; but occasionally they find the water exhausted, and then result terrible sufferings to the travellers, sometimes even causing the death of many of their number, and of their beasts of burden.

Climate.—The heat is usually intense during the day, but the nights are cool; sometimes the wind, which uplifts the sands in thick columns, obscures the sun at midday, and suffocates travellers. This is a magnificent but terrible spectacle. In calm weather, the rays of the sun descending perpendicularly upon the sand, and reflected by the white pebbles, produce a glare which is very dazzling to the eyesight. When the soil has been very much heated by the action of the sun, the *phenomenon of the mirage* is frequently produced. The earth then, at about

a league's distance, seems to be engulfed in a general inundation: one fancies he sees islands situated in the midst of a lake, whose chimerical waters reflect every object; but in proportion as he approaches, the borders of the water seem to recede and vanish only to reappear at a little distance; while the poor traveller, sadly deluded, discovers nought but an arid plain and naked rocks.

Minerals.—In certain portions of the desert are encountered ponds which contain beds of *salt* of sufficient extent to be worthy of exploration. This is even an article of commerce with the neighboring countries, where salt is a rarity. There are also pools which are covered with *natron*, an alkali of grayish color, used in the bleaching of linen and in the manufacture of glass and soap.

Vegetables.—Although certain portions of the desert, absolutely waste and barren, do not nourish a single plant, there are many others whose surface is covered in winter and spring with shrubs, and a certain quantity of grass, which sustain the cattle of the inhabitants of the oases. Elsewhere are found thickets of gum trees, or *senna*, a medicinal plant, whose leaves, exported in considerable quantities into other countries, furnish a very mild cathartic, but of a disagreeable odor, and much more in use formerly than at the present time.

In the oases, leguminous plants, among others very tender and excellent *onions*, find a congenial soil; but cereals do not seem to thrive. Cultivation is more particularly given to fruit trees—figs, pomegranates, apricots, &c., and above all, the *date tree*, which constitutes the principal wealth of the inhabitants of the Sahara. Its hard and incorruptible wood answers for building purposes; the leaves, macerated in water, acquire a flexibility which enables them to be used in the manufacture of panniers and baskets; of the fibrous network which envelops the palms, and attaches them to the trunk, very strong ropes are made, which are used for fettering the camels; the stones of the dates are ground, and given to the sheep and camels, to fatten them; and the sap, extracted from the tree by means of incisions made in the upper part of the trunk, furnishes a mild and very agreeable liquor. The fruit, with which my readers are familiar,

whether fresh or dried, reduced to powder, or in a compact mass, which may be preserved many years without detriment, serves for the maintenance of extremely numerous populations. Even the animals of the desert, dogs and horses included, can subsist on dates. Nevertheless, this fruit, substantial as it is, is inferior to the cereals, and soon surfeits those who have nothing else to eat. To vary this monotony, it is cooked in oil or butter, and mixed with onions and other vegetables; it is alternated as often as possible by the favorite dish of the inhabitants of the desert—a ragout of locusts boiled in water, with salt.

The date trees of the oases are raised by means of sprouts, which in 30 years attain their complete development. The tree then continues during 70 years in full bearing condition, and yields annually from 15 to 20 clusters of 15 or 16 pounds weight each, which constitutes an average of more than 200 pounds a plant. This cultivation is of such vital importance to the populations of these countries, that whenever an individual wishes to plant palm trees, or to form a *garden*, as they term it, in the oases, he calls in the assistance of his neighbors, to whom, on a similar occasion, he renders the like service. They remove the sand, in order that the roots of the plant may reach the damp soil, then encompass it with a trench, into which they pour the water necessary to keep the earth always properly moistened, or conduct thither by canals the waters of the neighboring springs at the time when, according to the regulations of the community, the proprietor's turn has arrived for profiting by these fertilizing irrigations.

Animals.—In most books written for the young, lions are distinguished as the inhabitants of the desert. But they never quit the wooded mountains of the Atlas to descend into the sandy plain, where the only species of noxious animals that are met with are vipers and scorpions. Neither do the gazelle, the antelope, the ostrich, nor the wild ass often venture farther than the extreme limits of the desert. The only animal truly indigenous in the sandy region is the *schob*, a great lizard, more than a foot and a half in length, with a large and heavy tail, which greatly retards its progress. This animal supplies travellers with an agreeable nutriment, whose flavor is similar to that of the kid.

It hides in the very dry sand, and the Arabs say that a single drop of water is sufficient to extinguish its life. The ugly *chameleon* also exists unmolested in the oases, where it is very common.

The *domestic animals* are the camel, the sheep, the goat, and the horse. The Arabs of the Sahara devote themselves with ardor to the rearing of *horses*, whose species they carefully seek to preserve and ameliorate. The love of this noble animal seems to be innate in the blood of the Arab. It is the companion in arms and the friend of the chief of the tent; it is one of the family retainers, and it is exalted in song and in the recitals of the warriors. As the tribes of the Sahara only design their horses for war or for the race, they are vastly superior to the horses of the Atlas, and it is among them that the *barb* race have preserved all the qualities of elegance, docility, and fleetness which are universally admitted to characterize it. The mares are especially prized by the inhabitants of the Sahara.

But the marvel of the desert is the species of camel known by the name of *mahari*, or running camel; the heart of the Sahara is alone adapted to its organization, which is in perfect harmony with the country where the wisdom and goodness of God have placed it. Accustomed to the dried grass of the sands, it would gain nothing if transported to more abundant pasturage. It is constituted both for the sterility and the heat of the desert, and could not exist elsewhere. It is higher than the camel; its neck is remarkably long, its legs slender and delicate. Its sagacity and fidelity are equal to those of the dog, and its swiftness superior to that of the horse. A good mahari can accomplish, it is said, from 28 to 32 leagues, for many consecutive days.

The manner of raising it is very curious. As soon as it is born, it is buried up to its middle in fine sand, so that the weight of its body may not bend its legs; during the first 14 days it is nourished chiefly with butter and milk. At the end of a month, the animal is allowed to run; a ring is passed through its nose, and its education commences. When skilfully trained, it acquires an extraordinary sagacity. If the warrior falls in a combat, the faithful courser lies down by his side, as if to invite him to mount

upon his back ; but if his master remains motionless, the mahari hastens back to the village to show the empty saddle to the family, thenceforth deprived of their chief. A good mahari is worth 10 or 15 times as much as an ordinary or carrier camel.

Population. — The population of the Great Desert is composed of two entirely distinct races — the *Berbers*, who are indigenous, and the *Arabs*, who have come thither from abroad. The former constitute the permanent portion of the population ; the men are occupied in cultivating the gardens, whilst the women weave burnos and other garments of wool. The *Arabs*, true to their vagrant instincts, traverse the desert with their flocks, undertake the transportation of the merchandise of the Soudan or Atlas, and escort or plunder caravans. They pass the winter and the spring in the plains of the desert, which, during this portion of the year, afford them at the same time pasturage and water. They remain usually only three or four days in the same place, and strike their tents as soon as the surrounding vegetation is exhausted. At the end of spring they enter the oases, load their camels with dates and woollen garments, proceed towards the north with their wives, children, and flocks, reach the *Tell*, (from *tellus*, in Latin, *fertile country*,) or country of the Atlas, at the time of harvest, and there supply themselves with grains at the lowest possible price. They pass the summer beyond the Atlas, exchanging dates and woollen fabrics, procured from the oases, for barley, raw wool, sheep, and butter. The fields, stripped of the harvest which covered them, are abandoned to the herds of the desert, which enrich the soil that yields them nourishment. The last days of summer are the signal of departure, and the caravan finds itself again in the oasis towards the end of October, when the dates have ripened. With its assistance the inhabitants gather them, and store them in the interior of their houses. Another month is spent in bartering the corn and raw wool, brought from the Tell, for the garden dates and the woollen articles fabricated by the women of the village. After this the nomadic tribe reënters the desert, in order to let its flocks graze, until the time when the summer will again give rise to the same journeyings and the same labors. After the date gathering, a sack of corn is worth in the Sahara two sacks of dates, whilst in the Tell, at the time of the corn gath-

ering, a sack of dates is worth two sacks of corn. This is, then, a commerce in which the Arab realizes very handsome profits. But in order to prosecute this traffic, the populations of the Sahara are necessarily dependent on the masters of the Atlas, whoever they may be; thus they say proverbially, "The land of the Tell is our mother; he who espouses her is our father;" and consequently they are eager to pay him tribute.

The centre of the desert is occupied by the great Berber nations of the Tuaricks, a part of whom lead a pastoral life, while the rest devote themselves to commerce and plunder, sparing only the caravans, which consent to pay them for acting as their escort. The *Tibboos*, established at the east, are likewise Berbers, but almost as black as the negroes of the south. They carry on a commerce of salt and natron, of which their country contains an abundance; but like the Tuaricks, with whom they are incessantly at war, their principal commerce is that of the slaves whom they buy or steal from the negroes of the Soudan.

2. PLAIN OF SENEGAMBIA. — This immense plain, situated west of the Kong Mountains, derives its name from the two most important of its rivers, (the Senegal and the Gambia.) It is terminated at the west by Cape Verd, the most western point of the ancient continent, so called by the Portuguese navigator Fernandez, who, after having perseveringly threaded the arid coast, was enchanted with the verdant aspect which the baobabs and other trees give to the little sandy peninsula, at the extremity of which is found this celebrated cape.

Aspect. — The coasts of Senegambia are generally flat and low, usually bordered by the gloomy vegetation of the *mangroves* — small trees which grow spontaneously in the water of the sea, and are often covered with oysters, which, attaching themselves to their trunk, give them a very singular appearance. In the interior the aspect of the country is much more varied; there are found rich plains, ponds, and magnificent forests containing many varieties of trees. After the rains the ground is every where covered with thick grass, which grows to the height of a man. When it is withered by the heat, the negroes generally set it on fire, in order thus to destroy many noxious reptiles and insects.

Climate.—In Senegambia, as in Soudan, there are but two seasons—the dry and the rainy. As soon as the latter has ceased, the rays of a burning sun cause the soil and the remains of vegetable matter to exhale an excessively dangerous miasma, which produces fevers, very often fatal, especially among the newly-arrived Europeans. In the dry season the heat is very powerful. During the day, from ten o'clock until three, such a profound silence reigns, that nature seems struck with death; night, on the contrary, is the time for motion, for mirth, and for dancing. Near the coasts, however, the breezes wafted from the sea somewhat temper the heat. But this ceases to be the case after the *harmattan* begins to blow—a violent wind proceeding from the north-east, or from the Great Desert. The air is then filled with sand and dust. Every thing rapidly withers; timbers bend, and creakings are heard in every house; the skin cracks, and finally bursts, unless the precaution is taken to anoint the body with oil. Journeys are, however, facilitated by it, as the pools of water and marshes, being speedily dried up by the *harmattan*, no longer present obstacles to the traveller.

The *minerals* are *iron* and *gold*; *silver* in Senegambia possesses almost as much value as gold; *salt* is both rare and expensive, and children, when they can procure it, actually regale themselves on it, as they would in other countries upon a lump of sugar.

Vegetables.—The vegetation is extremely rich and abundant in Senegambia. There grow the colossus of the vegetable kingdom, the *baobab*, fine tamarind trees, gigantic canol or down trees, and various species of palms, among others that from which is obtained a liquor known by the name of *palm wine*, and which is the delight of the negroes. It is no very easy matter to procure it, for it is necessary to climb to the top of the tree often more than 80 feet in height. For this purpose the negroes make a hoop of the palm branches tempered by fire. These hoops are large enough to surround the man and the tree, leaving between them a space of at least two feet. The negro supports his back against the hoop, and his feet against the tree, raising them successively, while with his hands he lifts the hoop, and so by degrees attains the top. Then, with a sharp iron instrument, he

makes an incision in the tree, near the place where the fruit grows, and inserts leaves to serve as a conduit for the sap, which falls drop by drop into a calabash (a kind of gourd) suspended from the nearest branches.

A good palm tree commonly yields 10 or 12 pints of liquor. When first extracted from the tree, this wine consists of a mild, white beverage, more or less sweet, slightly acidulated, sparkling, and somewhat similar to champagne. The Europeans then find it delicious; it does not affect the head, unless imbibed in great quantities, and it is very refreshing. After twenty-four hours it ferments and becomes sour. It is then intoxicating, and it is in that state that the negroes prefer to drink it. At the end of three or four days, it is nothing more than bad vinegar.

But of all the vegetable products of this country, the two most important to be known, on account of their commercial value, are the *arachis* and the *gum*. The *arachis* is an annual plant (now introduced into France) which grows spontaneously on the borders of the Senegal, to a height of one or two feet. It is a singular fact that immediately after the fructification of the flower, it inclines towards the earth, and in order to ripen, its seeds penetrate a little below the surface of the soil. The pods contain one, two, or three nuts, of the size of a hazel nut. These kernels, when fresh, have a sweet flavor, which may be compared to that of almonds or hazel nuts; this taste becomes still more agreeable when they have been slightly roasted. The earth nuts (as they are called) are highly relished by the negroes, who carry them on all their journeys. But what gives to this production its principal value is the rich and extremely sweet oil which is extracted from its kernels. This oil, which is very much appreciated, is already sold in considerable quantities in our markets, and might be rendered an important resource to the European colonies of Senegambia.

The species of acacia which produces the *gum* grows isolated in certain elevated portions of the desert, for it requires a dry and sandy soil; but it is found in especial abundance on the right bank of the Upper Senegal. It is from thence almost exclusively that the gum is exported to us, which we continue to call *gum arabic* because it was formerly obtained wholly from Arabia.

The gum tree is a small, thorny evergreen. The gum, oozing through the bark, and thickening in the sun, resembles a half opened apricot; it has likewise somewhat the same taste and flavor. It is often, also, the only provision of the tribes who wander in the interior of these countries. There are two gatherings of gum every year, in March and in December; the latter is the most considerable and the most important. The gum trees belong to no person in particular, and all the free Moors can send their captives to the gathering. The slaves designed for this labor usually proceed under the direction of *marabouts*, or Mahometan priests, who voluntarily engage in commerce. Arrived at the gum trees, they first construct themselves a house; each is provided with a milch cow and two leather sacks. Every morning the slaves fill one of these sacks with water, and armed with a long cloven pole, go in search of the gum. The acacias being very thorny, the pole is used for detaching from the high branches the *lumps* which they could not reach with the hand. As fast as the slaves collect it they put it into their empty sack. When it is abundant each one may amass as much as six pounds a day. After accumulating a certain quantity they bury it in the earth, covering it with ox hides and straw, and carefully trampling down the soil above it, in order that the hiding-place may not be discovered by other Moors, who would not fail to appropriate the whole of it.

After the gathering, camels and oxen transport the gum in great leather sacks to the *ports*, that is, to the markets, where, on the borders of the river, the different Moor tribes await the arrival of the European merchants. The latter, ascending the Senegal, bring glass ware, tobacco, arms, utensils, and especially the celebrated pieces of cotton, known by the name of *guineas*, which serve for the principal medium of exchange, or money, in these countries. Then begin interminable *palavers*, the universal passion of the African nation; in these conferences or discussions each seeks to take advantage of the other, but the Moor usually comes off conqueror, the European merchants, from self-interest, preferring to buy at a disadvantage, rather than go back empty-handed.

The *animals* are already mostly known to us — lions, elephants,

leopards, monkeys, gazelles, ostriches, parrots, and all kinds of small birds of the most brilliant plumage. There also is very frequently encountered a species of stork, whose dazzling white feathers are often preferred by ladies to the most beautiful plumes of the ostrich: this is the *marabou*, so called on account



Marabou.

of a resemblance, detected by the Moors, between the gravity of its attitude and the deportment of a Mussulman friar. The marabou has white plumage, with a dark brown mantle, and long gray down around its head. Under its neck hangs a kind of membranous bag, resembling a sausage. This bird makes continual war against serpents and noxious insects, and conduces to the salubrity of the air, by purging the country of the dead animals abandoned to the sewers. Thus, as its services are highly appreciated, and as it is never molested, it has become very familiar. It voluntarily approaches dwellings, and seizes without ceremony whatever suits its inclination. It is, moreover, gluttonous, and when satiated with food, it sleeps in an upright position, standing motionless on one foot for whole hours, on the borders of some marsh.

The *population* is composed, first, of *Moors*, men of the white race, but embrowned by the climate, whom commercial interests

attract to the northern part of Senegambia. They are very zealous Mahometans. There are likewise *Mandingoes*, skilful and cunning traders, of whom we have already spoken, and *Yolops*, who are considered the blackest and handsomest of negroes. The *Foulahs*, or *Peules*, with whom we are also acquainted, and which seem to be an intermedial race between the Moors and the negroes, are only partly Mahometans; and among this people the Christian missionaries find the easiest access, while, owing to prejudices, the Mandingoes and Yolops are almost inaccessible.

Three European nations possess colonies in this country. France has establishments at the north, especially at the mouth, and on the borders of the Senegal; England, farther south, on the borders of the Gambia; and Portugal, still farther south, on the borders of another river, the Rio Grande. The number of Europeans established in these different settlements, or holding garrison there, is inconsiderable; nevertheless, their influence extends to a distance, over a number of the neighboring populations. These colonists enrich themselves by a very active barter traffic with the negro tribes of the interior, who bring them not only earthnuts and gum, but also gold, hides, wax, (for bees are very abundant throughout Africa,) and finally ostrich or marabou feathers.

3. PLAIN OR COAST OF GUINEA. — This coast is a plain of immense length, but of little breadth, except at the head of the Gulf of Guinea, between the Bays of Benin and Biafra, where it acquires considerable extent.

The *aspect* is generally that of a yellowish, sandy, and arid plain, interspersed here and there with bushes and high grass, among which coil reptiles, and especially serpents. This whole plain is sprinkled in a most singular manner by termites' nests, innumerable constructions, resembling small towns, from 8 to 15 feet in height. Along the rivers the vegetation presents a flourishing aspect; on the borders of the sea is found only the gloomy verdure of the mangroves; but as one recedes from the shore, and approaches the Kong Mountains, the soil is covered with all the luxury of tropical vegetation. Every where stretch immense forests, only interrupted at intervals to make room for the habitations of men.

The *climate* is the same as that of Senegambia ; it is, however, still warmer and more unhealthy after the rainy season.

The *minerals* are also *gold* and *iron*.

Vegetables. — As in all the countries situated in the torrid zone, the vegetation is of extraordinary richness in all the well-watered portions of Guinea. The forests form almost impenetrable thickets ; on all sides hang festoons of flowers, of the most brilliant and variegated hues. In Guinea are found *cocoa nut* and *banana trees*, *pepper plants*, *oranges*, *lemons*, and *pineapples*, which grow even in the uncultivated regions ; *sugar canes*, with which the natives even feed their cattle ; finally, *yams*, which with the *manioc* and the *millet* are the essential food of the negroes.

But among all the remarkable trees of the coast of Guinea, none is of more importance than the *palm of Guinea*, or *ebais*, which the negroes call their *friend*, on account of the various resources which it furnishes them. They use especially the leaves, of which they make baskets and cloth, and the fruits, from which they extract the palm oil. As soon as they are ripe, they place them on the ground in troughs ; the negroes, shod with wooden sandals, then trample on them for a long time. They separate the oil, and purify it by causing it to undergo, over the fire, a slight evaporation, and afterwards despatch it to a distance in casks. The palm oil is yellowish, and almost solid ; it has the consistency of butter, and exhales a slight odor of iris. Considerable quantities of it are exported to Europe, and especially to England, where it is used in the composition of certain soaps. This palm oil has long been confounded with the *galaam butter*, which is the product of the *shea*, or *butter tree*.

The *animals* of Guinea are the same as those of Southern Africa — lions, tigers, elephants, monkeys, &c. ; all kinds of birds, of magnificent colors, but which do not sing. Parrots, of various species, fly in companies, and cause great havoc in the fields ; boas, and a great number of other serpents concealed in the tall grass, are a formidable enemy to travellers. We have already spoken of the termites and their ravages : red and black ants infest certain regions ; flies and gnats are also a veritable torment ; one is obliged to employ young slaves to drive away the flies during his meals ; and the gnats would effectually banish sleep, if they

were not kept at a distance by *mosquito bars*, or nets of gauze, which are spread during the night over the beds.

The *population* is composed of blacks — almost all idolaters, and abandoned to the vices which fetishism encourages. Nowhere, perhaps, does this brutish religion produce such grievous effects. The *fetishes*, according to the belief of the negroes, are inferior divinities, whom the supreme God has ordained over men to render him an account of their conduct. These jealous, vindictive, capricious spirits never cease to exercise their malice against men. In order to guard themselves from their continual attacks, the negro suspends over the entrance of his tent charms of every description, — feathers, gewgaws, bits of sculptured wood, fragments of vases, horns, &c., — at the same time that he covers his body with *gris-gris*, or scraps of paper on which are



A Negro with Fetishes.

inscribed sentences serving for amulets. Before every meal he must first assign a portion of it to the fetish, to avert his anger. At the first intimation on the part of the priests, goats, sheep, and cows are offered as sacrifices to the fetish, whom he asserts to be offended. Many parents devote their children to such an idol. The young people, thus consecrated, form associations which often assemble to practise the most licentious dancing, and to commit depredations in the vicinity. Licentiousness,

drunkenness, and cruelty are the sad attendants of fetishism. The most intuitive family affections are almost stifled. A deformed child is put to death at its birth, or suffered to perish protractedly of hunger; twins are also brutally slaughtered; almost every where the children are liable to be carried away and offered as sacrifices for the purpose of obtaining rain, or some similar favor. Polygamy reigns universally; it robs marriage of all its sanctity, and is completely subversive of family order. The chiefs have as many wives as they can buy and support; to fix one's eyes upon them when they go abroad is among some of these tribes a capital offence.

The Christians of Europe and America had great obligations to discharge towards these unfortunate populations of Guinea, whom their ancestors have so long decimated and demoralized by the abominable slave trade, which has nowhere been more active or more cruel. Therefore, since the commencement of this century, the different churches have emulated each other in efforts to diffuse among them the blessing of the gospel, and of a truly Christian civilization. We design briefly to mention what has been undertaken in each portion of this country, which forms a long belt of more than 800 leagues.

1. On the beautiful and fertile coast of *Sierra Leone*, (mountain of lions,) west of the Mountains of Kong, the charity of the English Christians is most admirably exemplified. At their solicitation the English government consented to deposit there the cargoes of slaves whom its cruisers rescue in great numbers from the slave ships; and there these unfortunates find, on their arrival, missionaries and schools to initiate them in the benefits of Christian civilization. Nothing could at first be more disorderly and vicious than these slaves, who belonged to more than 30 different nations, and could not even comprehend each other's language. But now, this is an exceedingly flourishing colony, which enjoys a regular administration, organizes annual exhibitions of its products, and exercises an extremely pacific and valuable influence over all the neighboring colonies. Many churches are established there, in part of which negro pastors officiate, some of whom are very eloquent, having been instructed and prepared for preaching in the seminaries of the colony. There are also a great number of

schools, both for boys and girls. From Sierra Leone the gospel is carried into the interior of Africa by the missionaries, and especially by the former slaves, who return into their native country.

South-east of Sierra Leone stretches the *Grain* or *Pepper Coast*, better known under the name of *Liberia*, (free country.) Thither a society of American Christians annually transport from the United States a certain number of blacks, emancipated from slavery. Liberia now forms an independent republic, recognized by the principal powers of Europe. By placing themselves under the protection of this republic, all the neighboring tribes have abolished the slave trade, and have pledged themselves never to commence war without first submitting their difficulties to the authorities of Liberia. There are in this territory thirty churches, substantially built of stone, and a great number of schools.

Farther east lies the *Ivory Coast*, resorted to for its ivory. There also, near *Cape Palmas*, we find another more recent American colony, into which is admitted every negro who consents to renounce the use of intoxicating liquor, that poison so fatal to their race. This colony of Cape Palmas, although less numerous than the preceding, already presents satisfactory results.

Beyond extends the fertile but very unhealthy coast denominated *Gold Coast*, on account of the great quantity of this metal which was thence obtained. It was this coast that furnished the English with the material for their first gold pieces, which have consequently always preserved the name of *guineas*. The English, Danes, Dutch, and French possess different establishments on these shores, whence ivory, pepper, and palm oil are also procured. English missionaries at *Cape Coast Castle*, and missionaries from Basle, at *Accra*, have founded flourishing churches, and thence have commenced in the neighboring kingdom of the *Ashantees* the evangelizing labors to which we have already alluded. The terrible *African fever* has dealt severely with these zealous servants of God. The institution of the missions of Basle, for example, lost by it eight missionaries in eight years; and notwithstanding this, the undertaking has not been for a moment interrupted. However, now that they are assisted in the most

laborious of their manual labors by emancipated negroes, less exposed than themselves to the malignant attacks of the climate, the mortality is not so great. "Let a thousand missionaries perish, rather than abandon Africa." Such was the epitaph which one of them gave directions to have inscribed on his tombstone, at the time when he quitted America, his country, to establish himself on the African shores. Three months after his landing he was no more.

Still farther east is the *Slave Coast*, whose name recalls the species of commerce and iniquity which is there perpetrated. There is found the famous kingdom of *Dahomey*, which is now the chief centre of the trade, and has become celebrated through the terrible cruelties of which it is the theatre. The king enjoys absolute power; the police is thoroughly organized, the roads good, the cultivation very extensive, and industry progressive, but on all occasions torrents of blood are shed. The king, *Gulzo*, is a *man hunter*, and every year he issues from his palace, without announcing beforehand which colony he has devoted to ruin. The band of black hunters, having gained their destination, massacre the old men and women, crush tender infants against the stones, set fire to the villages, and then depart, conveying away the young men and girls, some of whom are reserved for the trade and others for human sacrifices; for there are no entertainments, no festivals, in which the blood of great numbers of unfortunate prisoners is not shed. And strange as it may seem, nearly half of his savage army is composed of admirably disciplined regiments of women. These sanguinary manners are naturally allied to the grossest fetishism. The tiger is the great fetish of Dahomey; but serpents, carefully nourished in certain temples, are also worshipped, before which every one prostrates himself, kissing the dust. English missionaries have, however, established themselves in the midst of these depraved populations, and are not without hopes of obtaining success among them.

The *Coast of Bènin'*, still more unhealthy, has no missionaries, and is horribly ravaged by the trade.

On the *Coast of Calabar*, south of the preceding, French

Catholic missionaries have recently founded an important station near the *River Gaboon*, by the side of an American Protestant mission. Both have, however, but just commenced their labors.

4. PLAIN OF EGYPT, OR VALLEY OF THE NILE.—Egypt is situated at the north-east of the African Continent. Properly speaking, this is only a narrow valley, which follows all the windings of the river. It is, so to speak, a ribbon of magnificent verdure, from one to four leagues in width, unrolling itself over a length of nearly 3000 miles, between two chains of small and absolutely arid mountains, whose deserted and barren aspect serves to enhance so much the more the rich vegetation of the valley. The latter, however, widens considerably on approaching the sea, where it forms a vast and fertile, but somewhat marshy plain, around the different mouths, or *Delta*, of the Nile. Beyond this valley and the plain of the Delta, all this portion of Africa is sandy and barren.

Contrary to what may be observed in all the other valleys, the banks of the river are more elevated than the rest of the soil, which descends in a perceptible slope in proportion as one recedes from the Nile. In consequence of this inclination of the banks, whenever the river rises in any degree above them, it diffuses itself over the entire surface, and inundates the whole of the cultivated country. The rich black slime which it spreads over the earth serves to enrich the soil, and gradually elevates it, although in an almost imperceptible manner, so that towns, which were formerly on the borders of the sea (Rosetta and Damietta) are now found at more than a league's distance from it, whilst in Upper Egypt many temples and ancient palaces are now partly buried or completely hidden by the cultivated land.

Aspect.—Nothing can be more variable than the aspect of the cultivable soil of Egypt. First, in the season of drought, it presents a completely arid surface, even fissured with broad crevices, of five or six feet in depth. Then, in the month of July, during the inundation, which lasts three months, the whole valley resembles an immense lake, sprinkled with groups of trees and villages, built on the heights. At the end of this time the water

retreats ; by January it has abandoned the valley and the innumerable canals which intersect it in every direction, and only a black, slimy soil remains, in which the husbandman hastens to deposit the seed, the hope of the future harvest. Often, indeed, the seed (the rice, for instance) is sown before the waters have completely disappeared from the fields ; and hence the expression in the Bible, (Eccles. xi. 1,) “ *Cast thy bread upon the waters, for thou shalt find it after many days.*” The period of vegetation follows almost immediately, and the whole country is covered with immense sheets of verdure and ripening corn.

Climate. — Egypt has but two seasons — the spring, or the cool season, which lasts from December until February, and the summer, or hot season, which continues all the rest of the year. There is literally no rainy season ; for in this country so rarely do the clouds diffuse water, that it is scarcely too much to assert that *it never rains*. The soil is therefore dependent, during the remainder of the year, upon the moisture with which it is impregnated at the time of the inundation. The dews, it is true, are very abundant ; but on the banks of the river much attention is given to artificial irrigation, by means of wheels, or buckets, plunged into the Nile, and set in motion either by men or oxen. When the soil has been sufficiently heated by the action of the sun, the phenomenon of the *mirage* is frequently produced in Egypt. The sky is usually of perfect serenity, and the nights rendered cool by a north wind, which often rises at sunset. But this is completely reversed, when the *kamsin* begins to blow. This violent wind of the desert, whose Arabic name signifies *fifty*, so called because it blows in the fifty days which precede and follow the vernal equinox (22d of March,) has also received from the Arabs the name of *simoom*, which signifies *poison*. As soon as it commences, the sky becomes overcast, the sun appears of a dull red, a fine gray dust fills the air, and penetrates every where, even into the most compact boxes. The heat becomes excessive and parching, like that which exhales from the mouth of an oven at the instant of removing the bread ; respiration is rendered short and laborious ; in vain does one have recourse to continual draughts of water • nothing restores

the perspiration. The inhabitants retire into their houses, and silence like that of night pervades the streets. Fortunately, this species of tempest is seldom prolonged beyond three days in succession. Sometimes the kamsin causes entire caravans to perish in the desert. As soon as the Arab perceives it, he casts himself on the ground, buries himself in the sand, and covers his body with garments. The camel even, guided by instinct, buries its nose in the sand, in order that the fine dust of the simoom may not penetrate into its lungs.

Minerals. — Egypt has scarcely any minerals, properly so called, neither gold, silver, copper, nor iron; but it has always been famed for its *granites*, especially its red *sienites* and its *porphyries*, very hard stones, spotted with different colors, which have been used in the construction of most of the obelisks and Egyptian statues. The *alabaster* of this country has likewise always sustained a great reputation. This is a beautiful, soft, white substance, of which all kinds of vases and ornaments may be carved; the pacha of Egypt is now constructing an entire mosque of it in the citadel of Cairo, his capital city. Certain lakes, west of the Delta, are also covered in winter with *natron*, which the heat soon transforms into a thick, hard, and crystalline bed, which is detached by means of iron bars.

Vegetables. — Under the triple influence of the waters of the Nile, of a hot climate, and of the slime, which, when carefully mingled with the sand, composes an excellent vegetable earth, Egypt yields the richest and most varied products. It has always been renowned for its fruitfulness in cereals; thus in the Delta *rice* is cultivated, *wheat* especially in Upper Egypt, and every where *barley*, with which the horses are commonly fed; of the *dhoura* the peasants make their bread, while the dry stalks take the place of firewood, in which Egypt is completely deficient, and for which they are obliged to substitute dried plants or manure; *maize* yields a double crop every year; the *Greek fennel*, which is valuable as fodder, is also eaten by the Egyptians themselves, who, moreover, roast the seeds and prepare them like coffee; *beans* cover immense fields; they are smaller but better than ours, and form one of the principal aliments of the inhab-

itants, as also of their cattle; *kidney beans*, *peas*, *lentils*, and *lupines* abound; the ligneous stalk of the latter is a common article of fuel; the *onions*, which were so much lamented by the wandering Israelites in the desert of Sinai, always maintain their ancient reputation; they are smaller but milder than those of Europe, and very great consumption is made of them. In this country are found a profusion of *watermelons*, that refreshing fruit which Providence seems to have dispensed with a liberal hand in the hottest countries. It is well known what a benefit this melon proved to the French soldiers during their march from Alexandria to Cairo, when they had so much to endure from exposure to the heat. Thus, in order to express how invaluable they found this fruit, they called it *holy water melon*, after the example of the ancient Egyptians.

Among the textile plants, especial mention should be made of the *flax*, of which the Egyptians have been skilled, from the remotest times, in manufacturing cloth of the finest quality; *cotton*, which, recently introduced, now constitutes one of the principal sources of the pacha's wealth; and *hemp*, which is used not only in the manufacture of ropes, (flax being preferred for cloth,) but also in the preparation of an intoxicating beverage, called *hasheesh*. The hemp seeds, ground and mixed with various aromatic substances, are prepared in greenish pastils, a piece of which, of the size of a hazel nut, is sufficient to produce a sensible effect. It is employed in drinks, and smoked in the form of a powder, in a kind of pipe or *narghileh*. In either case it produces a singular intoxication, — a strange mixture of happiness, foolish mirth, and pleasant dreams, — but it soon imbrutes those who indulge in the use of it. It was by means of the *hasheesh* that, in the times of the crusades, the famous Mussulman chief, known under the mysterious name of the *Old Man of the Mountain*, excited his fanatic bands, whom he sent to a distance to assassinate his enemies. It is, moreover, from the word *hashashin* (*hasheesh drinker*) that chroniclers have derived that of *assassin*, which we find in our language. At the present day the preparation of the *hasheesh* is confined to the lower classes.

Among the *tinctorial plants* of Egypt must first be named the *carthamus*, an annual plant, originally from India, whose flowers

contain a coloring principle, called *carthamine*, or *vegetable red*, and which is the object of a considerable commerce. The best carthamine comes from Egypt; the color is of little durability, but this defect is counterbalanced by the beauty and variety of its shades; the dyers apply it principally to silk and cotton. In certain countries, the women make great use of the coloring principle of the carthamus; artistically mixed with the mineral powder called *talc*, it becomes a very choice paint, called *Spanish rouge*. Another tinctorial plant which flourishes especially in Egypt is the *henna*. The leaves, dried and reduced to powder, form a paste which the women of all Northern Africa ordinarily employ in dyeing yellow or red their finger and toe nails, lips and eyelids. They also at night apply this paste to their hands, in skilfully drawn figures, which leave an impression of very graceful designs. *Saffron*, *indigo*, and *madder*, the cultivation of which have but recently been introduced, still yield inconsiderable products.

Among *oleaginous plants*, we have only to mention the *sesame*, of which we have already spoken, and which furnishes, for exportation into France and elsewhere, considerable quantities of an oil very much appreciated in trade. Egypt also has *olive trees*, but they are not very abundant.

Among the number of plants and trees of divers uses, and already known, which exist in Egypt, must first be specified the *date tree*, one of the chief glories of this country — a tree every part of which is of inestimable benefit to the poor inhabitants of these countries. Unfortunately, the pacha has not failed to impose very heavy taxes upon these most useful plants; he keeps an exact and strict register of them, and for the six millions which are found in the whole country he receives more than two millions of francs. There are twenty-tree different species, and in Lower Egypt they are sometimes so abundant that they form complete forests — the only ones known in the Valley of the Nile. The *tamarinds*, cultivated principally for their shade, shelter the *sakkies*, or machines, which raise the water for irrigation. The *sycamore* is the largest tree in Egypt, and its branches, which spread almost horizontally, form superb shades, invaluable in a hot country. It produces a species of fig; but by an anomaly in

nature, they are not suspended, like the fruits of other trees, from the extremities of the branches, but grow out of the trunk itself, and on the thickest boughs. They are of a yellow color, and much less savory than the common fig. The sycamore wood is considered incorruptible; the cases of the ancient mummies are all made of it. The *sugar cane*, recently introduced, is only cultivated for the manufacture of sugar in Upper Egypt; that of the Delta is sold in the market as fruit, and women and children may every where be seen with pieces of it in their mouths. The *roses* of Fayoom (a small isolated province at the west of the Valley of the Nile) give rise to a branch of commerce very profitable to the Orientals. As for the *cactus racks*, *jujubes*, *carobs*, *lotuses*, *pomegranates*, *oranges*, *lemons*, and *bananas*, which are cultivated in greater or less abundance in the gardens, we are already acquainted with their products, and have nothing to add respecting them. Enough has already been stated to give an idea how rich this country might become if it had a better government.

Animals.—Under this head we have nothing remarkable to relate. Egypt has always been too well populated for wild beasts of any importance to find refuge there. It contains only a few *hyenas*, *jackals*, and various *serpents*; among others the *naia*, which the Egyptian enchanter can render stiff and motionless by placing their finger on the nape of its neck. This pressure throws it into a kind of lethargy, which gives it the appearance of a stick. This phenomenon explains that passage of Exodus in which we are told that Pharaoh's magicians changed their rods to serpents, but that these serpents were immediately devoured by Aaron's serpent. (Exodus vii. 11, 12.)

The domestic animals, horses, camels, oxen, buffaloes, mules, and asses, are all familiar to us. We should, however, particularize the beauty of the *Egyptian asses*, which are employed, in preference to horses, for long journeys across the desert, together with camels, loaded with the heavy merchandise or baggage. In the principal squares of the Egyptian cities, Alexandria and Cairo, are seen stationed, instead of hackney coaches and carriages, sprightly and mettlesome asses, which rapidly convey travellers wherever they desire to go, every where accompanied by their *drivers*, young boys

accustomed to run behind these animals, and serve as guides to travellers. We have also a curious remark to offer relative to the *Egyptian hens*. They have no disposition to sit on their eggs—a process which is usually dispensed with by hatching them in hot ovens, maintained at a suitable heat. The owners of eggs carry them to the oven, and exchange two for a chicken. It is calculated that the number of chickens thus artificially hatched may amount to even 30,000,000 a year. Many *pigeons* are also raised, much esteemed for their flesh, which is very delicate. Flocks of these birds may constantly be perceived alighting in the fields, or flying over the river. Villages may be continually discovered bristling with dovecots, which are sources of wealth to the poor peasants. The *ibis*, the bird venerated by the ancient Egyptians

*Ibis.*

as the destroyer of serpents, and whose body is so often found embalmed among the mummies, is scarcely met with except in Upper Egypt, or higher still, in Nubia and the country of Sennaar.

The population is composed of *Turks*, who are the conquering people; they occupy the high posts, or employ themselves in commerce; and *Arabs*, a small number of which, under the name of *Bedouins*, inhabit the frontiers of the desert, and have continued nomadics, whilst the others, called *Fellahs*, have become husbandmen, and form the mass of the Egyptian population. Notwithstanding the richness of the soil, the Fellah is miserable;

the rice and wheat which he cultivates are for his masters, while he is obliged to content himself with his black and sour dhoura bread and a few onions. He wears a gloomy air, like a man accustomed to suffer, and has no taste in ornamenting his dwelling. His cabin resembles a beehive into which the air and light can only penetrate through the door, or through an opening made in the arched roof; the yard is merely a stable, where all the animals live promiscuously. In the villages one is assailed by beggars. Besides Turks and Fellahs, who are Mahometans, there are some hundred thousand Christians—the *Copts*, who appear to be descended in a direct line from the ancient Egyptians; they have like them flat noses, thick lips, and brown complexions. Their Christianity, similar to that of the Abyssinians, is very corrupt, and consists chiefly in external ceremonies. Under the name of *scribes*, the Copts fill the inferior offices in all the administrations. The *Jews*, *Greeks*, and *Franks*, (or Europeans,) all of whom are engaged in commerce, are few in number.

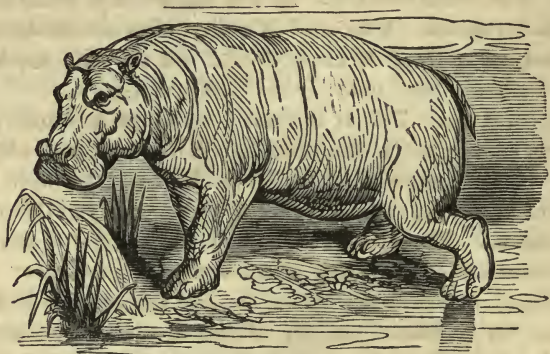
SECT. 5. LAKES OF AFRICA. — The African continent contains only a very small number of lakes of inconsiderable extent, or sufficiently well known. None of them appear to have any commercial importance.

LAKE 'NGAMI. — This beautiful sheet of water, situated on the high plateau of Africa, at a great distance from the country of the Bechouanas, was discovered in June, 1849, by an intrepid English missionary, Mr. Livingston. It is thought to be the same as that of which the Portuguese had knowledge, and which they had called *Mara'vi*, but which has long ceased to be represented on the maps, because no European had seen it.

LAKE TSANA, OR DEMBEA. — This lake is situated in Abyssinia, on the plateau of Amhara. It is traversed by the Blue Nile, whose waters never mingle completely with those of the lake, and which soon issue from it, forming a great number of cataracts. Every year, it has inundations, and the slime deposited by its waters renders the province of Dembea extremely fertile. This province produces the best wheat of Abyssinia, formerly reserved for the king and the nobles of the court.

Lake Tsana, like all the other lakes or rivers of Africa, abounds in *hippopotami*. This heavy, amphibious animal, the third of

the quadrupeds in size, is from 12 to 16 feet in length, and almost as many in circumference; but it is thick set, and low on its legs. Its head is enormous, and when it opens its wide mouth, it reveals formidable teeth. With such a jaw, which usually serves only to grind the hard and tough plants on which it subsists, the hippopotamus can easily sink a small craft. Its body is enveloped in a coat of fat, which is covered by a thick,



Hippopotamus.

hard, and shining hide, nearly destitute of hair. Its heavy and massive legs are terminated by small conical hoofs; notwithstanding these appearances, this animal runs with great rapidity, and at the first alarm endeavors to cast itself into the water. It there dives, and seeks shelter in the bottom of the basin, where it can remain a long time without being obliged to rise to the surface. It waits in this safe retreat until the danger is past, and if in the mean time it requires a new supply of air, it comes to the surface to take it, exposing only the extremity of its nostrils.

During the day the hippopotamus usually sleeps in the sun, when it can find a small island, where it fancies itself secure. At nightfall it goes to seek its food in the marshes or cultivated fields on the shore, and there the borderers of Lake Tsana are accustomed to set their traps for it. This is indeed the sole occupation of the Christian colony of Oeita. A lance, the iron of which is not attached to the wood, is placed in such a manner

that the animal, stumbling against the trap, pierces itself with it. It then seeks refuge in the lake; but loss of blood obliges it, after a while, to regain the border, where it finally expires. As soon as the body is discovered, the lance left in the wound is examined, and by the mark which it bears the owner is recognized. He then holds a great festival with his family, and friends are invited to partake of the flesh, which is considered excellent and savory. Salted and dried, the layer of fat, which is found immediately under the skin, is very much esteemed by certain epicures, among others by those of Cape Town. Of the skin are made various kinds of whips, much prized in Abyssinia.

LAKE TCHAD.—This is a great lake of fresh water, occupying an extent equal to the whole of Switzerland, and which is situated in the centre of *Nigritia* or *Soudan*. Its fertile but marshy banks form a striking contrast to the aridity of the neighboring deserts. The climate is extremely unhealthy; but this is not the only nor the greatest discomfort of this country. The singular construction of the houses, excited the surprise of Major Denham. They consist literally of five or six contiguous cellars. He was still more astonished when he learned that this singular arrangement was adopted in order that the inhabitants might find in their abodes a retreat from the incessant attacks of flies and gnats. The English traveller could scarcely credit their statements, until one of the men of his company, who had inconsiderately emerged from his cellar, reëntered with his head and eyes in such a pitiable condition, that he was sick, in consequence, during more than three days.

SECT. 6. PRINCIPAL RIVERS OF AFRICA.—The African continent, a country of aridity and burning deserts, presents only a very small number of inconsiderable rivers, which generally descend by many cataracts from plateaus of greater or less elevation, scarcely permitting navigation to use them for the transportation of people or merchandise.

Five of these rivers descend from the plateau of Upper Africa, in three different directions; three others from that of Upper Soudan.

THE ORANGE RIVER.—This river, situated north of the Nieuwveld Mountains, takes its rise in the Malontis Mountains,

and empties at the west into the Atlantic Ocean. It derives its name from the color which is communicated to its waters by the sand on its banks. The Orange, for the most part, extends itself in a very broad sheet of water, but possesses little depth. Its shady banks are the retreat of a considerable number of animals. There are found, for example, many *tortoises*, which birds of prey, crows or kites, maliciously lift in their talons, to a certain height, in order to cast them upon the rocks, where, their shell being broken, they are instantly devoured by their greedy enemies. On the borders of this river, legions of geese, wild ducks, and pinta-



Flamingoes.

does may also be seen ; but the most curious objects are the troops of *Flamingoes*, so called on account of their back of a scarlet

red, and their wings of a dazzling rose color. They are large birds, whose head often rises six feet in height; those of Southern Africa are much smaller. They have long and bare legs, like the waders, but their claws are united by a membrane, like those of web-footed birds. Their long, slender neck supports a small head, provided with an enormous bill, broken, as it were, at the extremity. They live on shell-fish and insects; but before commencing the search for food, they range themselves in a line along the shore, stationing sentinels, for the common safety, which by a loud cry warn them of the approach of the enemy. In case of danger the troop take to flight, always maintaining regular order. Their nests are of conical form, a foot and a half in height, which they bestride as a horseman does his steed, their long legs preventing them from assuming any other attitude for hatching. The flesh of the flamingo was much esteemed by the ancients; the tongue especially being regarded as a very delicate morsel; but to modern taste this meat possesses a disagreeable, marshy odor, and an oily flavor.

THE ZAMBEZE.—This river, whose sources on the high plateau are unknown, descends from terrace to terrace, by a great number of falls and cataracts, traversing the Lupata Mountains and the coasts of Sofala and Mozambique, where it empties into the Indian Sea by many mouths. The Zambeze annually inundates its low plain, in the months of March and April, thus rendering its delta one of the most fertile, but also one of the most dangerous in Africa, on account of its insalubrity. Navigation is impeded on this river not only by its numerous falls, but also by the sand banks which the currents of the north constantly accumulate at the entrance of the mouths of the river. Nowhere, however, are the hippopotami so numerous and so formidable to the feeble craft of the natives. The Portuguese have long since ceased to ascend the Zambeze for the purpose of trading in the interior, contenting themselves with a commerce of exchange on different points of these coasts.

THE NILE.—The sources of the Nile are yet unknown; at least no European has succeeded in discovering them. However, one of the evangelical missionaries, established on the coast of Zanguebar, Dr. Krapf, whose discoveries the Geographical

Society of Paris have recently rewarded, (as also those of the missionary Livingston,) declares himself convinced that the Nile proceeds from a great lake called Namkenia, situated nearly under the equator, at the foot of very high mountains, which M. Krapf has often seen at a distance, always covered with snow.

Proof seems to be afforded that the sources of the Nile are nourished by the melting of the perpetual snows on the remote plateaus of Upper Africa, from the circumstance that its waters often rise, especially in the hot season, to such a degree that it then resembles a lake rather than a river. It extends from south to north across the Mountains (real or imaginary) of the Moon, bearing the name of *White Nile*, in opposition to another of its sources, six times less than itself, which, under the name of *Blue Nile*, descending with impetuosity from the mountains of Abyssinia, makes a great circuit, and unites with the principal river in the plains of Sennaar. Thence, after receiving also the Tacazze from Abyssinia, the Nile traverses Nubia, where it creates a certain number of falls, and finally enters the plains of Egypt, at the extremity of which it empties into the Mediterranean by many mouths, forming the most celebrated of deltas.

One of the most renowned productions of the Nile is the *papyrus*, a large reed, of which the ancient Egyptians manufactured paper, which was used throughout the west until the invention of parchment, in the third century, and more especially that of rag paper in the tenth, had rendered it useless. Its triangular stalk rises without leaves to a height of 10 or 15 feet, and terminates in an ear, bearing a plume or umbelliferous tuft. The papyrus is now seldom found in Egypt, but on the Upper Nile it is used in many ways. A sweet juice is expressed from the root, which was formerly used with food; in Abyssinia the stalk is woven into such a compact material that canoes are made of it, an acacia trunk serving as a keel. But originally this plant was principally used in the manufacture of paper. For this purpose the pellicle, found in the inside of the bark, was cut in long and narrow strips; they were then placed upon each other, crosswise, and forcibly pressed, while the sweet sap of the

plant, acting as a paste, served to fix them in leaves of the proper size. They were afterwards carefully smoothed by means of an ivory plate.



Papyrus.

The *crocodile* probably associates itself most familiarly, in the minds of my readers, with the name of the Nile. We have already had occasion to speak of it in connection with the Ganges. This animal was formerly very common throughout Egypt; now it is only met with in Upper Egypt and in Nubia. There, as one ascends the river in a boat, he may often perceive a crocodile, basking in the sun, on a sandy islet. But while it reposes, facing the wind, with its mouth half open, a multitude of insects — worms, flies, &c. — adhere to its palate, without its being enabled to rid itself of them, because it cannot move its tongue. Then a little bird, the *trochilus*, fearlessly enters this motionless jaw, and makes a meal of the insects, to the great relief of the monster. Not content with this service, it is said that the *trochilus*, at the approach of man, warns the crocodile by its cries, in order to put it upon its guard.

If this reptile has friends, its enemies are far more numerous. To say nothing of the serpents, which purloin and devour its eggs, nor of man, who pursues it in so many ways, we should signalize as its most formidable adversary the *man-gouste*, or *ichneumon*, a carnivorous animal of the size of a cat, with a long tail, covered with long hair. It is tamed in the Egyptian houses, to clear them of rats, serpents, and other noxious animals; but its favorite food is the eggs of the crocodile, which it seeks with extreme eagerness. Thus the ichneumon was formerly worshipped in those Egyptian cities where the crocodile was detested, and pursued in those where he was held in honor. It has been said that the ichneumon, gliding into the mouth of the monster during its sleep, enters into the interior of its body, eats away its entrails, and makes its escape by piercing through the exterior of the carcass; but this is a mere fable.

THE ZAIRE AND THE COANZA.—A vast number of water-courses descend from the mountains of Congo and flow into the Atlantic Ocean, creating numerous falls and cataracts. The two principal are the *Congo*, which at its mouth takes the name of *Zaire*, and the *Coanza*, which is situated a little farther south. These rivers are almost wholly unknown to us.

THE NIGER.—This celebrated river, known even to the ancients, but whose direction and course have remained a mystery even to our times, rises in the Kong Mountains, and under the name of *Joliba* (or great water) flows first north-easterly as far as Timbuctoo, on the boundary of the Great Desert, then, bending abruptly towards the south-east, it takes the name of Quorra, and empties into the sea, forming, between the Bays of Benin' and Biafra, an immense delta, completely inundated every year during the rainy season. At this period, indeed, the Niger has considerable risings. It then overflows and diffuses itself to a distance, washing away with its waters whole trees, the bodies of animals, and ruins of every description. On the contrary, when the rains cease, the river sinks so rapidly, that in a few weeks it ceases to be navigable for vessels drawing more than three feet of water.

Since the unfortunate *Mungo Park* discovered the upper course, in 1805, and the *brothers Lander* the middle and lower

portion, in 1830, various scientific and commercial expeditions have vainly assayed to ascend this river. The last, which was undertaken in 1841, seemed as admirably planned as could be desired; but the terrible *African fever*, defying all the precautions which had been taken, raged with such violence among the crew, that with great difficulty a few convalescent individuals succeeded in bringing the two steamboats back to the sea. The expedition proved a complete failure.

THE SENEGAL AND THE GAMBIA.—These two rivers of Senegambia rise nearly west of the Kong Mountains. The banks of both are clothed with magnificent vegetation, or bordered with marshes, and their sinuous course is sprinkled with fertile islands. A sand bar prevents large ships from entering the Senegal; but merchant vessels can always ascend the Gambia for a distance of 60 leagues. We have already observed that the former is the principal medium of communication between the Europeans and the Moors, who carry on the *gum trade*; the latter no less facilitates commerce with the colonies of the interior.

Like all the rivers of Africa, the Senegal and the Gambia are infested with *hippopotami*, *alligators*, or *crocodiles*; but the latter are much the most dangerous. They frequently seize, on the borders of the river, those who have come thither to quench their thirst, whether man or beast. Sometimes the unfortunate being who finds himself in the clutch of the monster can compel it to relinquish its hold by plunging his fingers into its eyes. The eggs of the crocodile are very highly prized in these countries; they are from four to five inches in length, alike at the two extremities, and have a very hard shell. When found, they are divided among the chiefs.

SECT. 7. ISLANDS OF AFRICA.—With one exception, all these islands are very small, and merit but little attention. They are, commencing at the north-west, the *Azores*, so called on account of the great number of *açores*—hawks—which the first Portuguese colonists there encountered. These islands are volcanic, and of an extremely picturesque aspect; the climate is generally very salubrious, although somewhat damp; the temperature is delightful, and preserves throughout the year a delicious spring-like mildness, which attracts thither many foreign invalids.

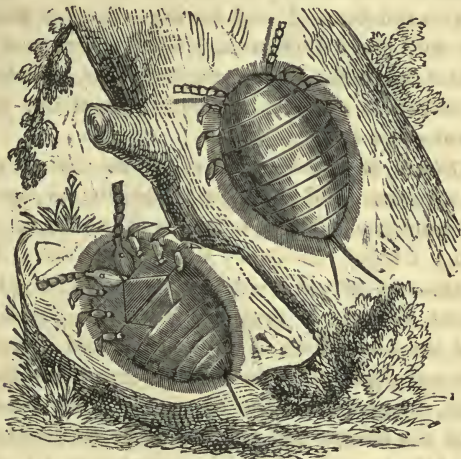
The soil is fertile, although poorly cultivated ; grain, wine, and especially oranges, constitute the principal agricultural wealth of the Azores. Nothing can exceed the magnificence of the orange plantations at the season of the gathering. In seven years these trees are in full bearing, and having arrived at their perfection, may, for some years afterwards, yield an average of from 10,000 to 15,000 of the fruit. Every year 300 ships, loaded with oranges, sail for England ; in 1839, 120,000 boxes of this fruit were exported, valued at about \$600,000.

The *Island of Madeira*, west of the Strait of Gibraltar, has also a volcanic and exceedingly picturesque aspect, and a hot but very salubrious climate, which draws thither a great number of wealthy English families. When discovered, Madeira was entirely covered by vast forests, which were burned by the orders of the first Portuguese governor, occasioning such a conflagration that the inhabitants of the colony were compelled, during two days and nights, to immerse themselves up to their shoulders in the sea, in order to escape the fury of the flames. In consequence of this fire the soil acquired extreme activity. The cultivation of the sugar cane, which was introduced from the Isle of Cyprus, has long since been abandoned for that of the vine, whose products are known throughout the world, under the name of *Madeira wines*. But these wines, every where more or less counterfeited, have lost much of their importance in the island of which they once constituted the principal wealth.

The *Canaries*, south-east of Madeira, and lying near the coast of Africa, are volcanic islands of a very hot climate. The most remarkable of these seven islands is that of *Teneriffe*, in the centre of which towers a celebrated volcano of 11,400 feet in height, which is sometimes active, although its summit is covered with snow during the whole year.

The principal productions of these islands are very strong wines ; wheat, which yields two crops, one in the month of February, and the other in the month of May ; *orchal*, a species of lichen, which, pulverized and mingled with lime or soda, furnishes a violet or purple color, very much employed in dyeing ; *dragon's blood*, a red resinous substance, formerly used in medicine, and now

in the composition of varnishes, and which is obtained by incision from the trunk of the dragon, a tree of the high lands of the Island of Teneriffe; and the *cochineal*, a small insect, originally from



Cochineal.

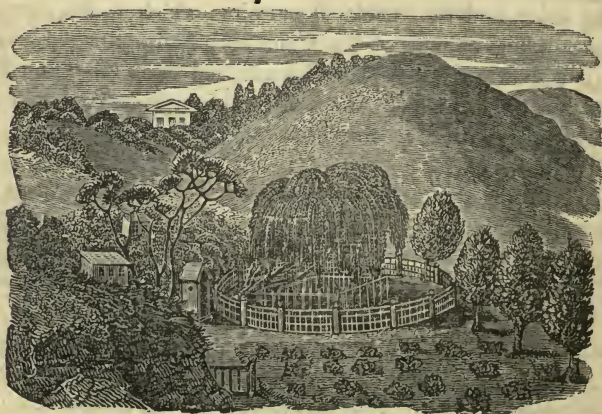
America, which lives on the cactus, where it is procured, plunged into boiling water, and then dried. It supplies a beautiful scarlet color, and the cochineal carmine, which is employed in painting. The animals of the Canaries afford nothing remarkable; it is, however, from these islands that those charming little yellow birds are obtained, with which all my readers are familiar, and which, from their primitive country, have received the popular appellation of *Canary* birds.

The *Islands of Cape Verde*, about 100 leagues west of the cape of the same name, are some of them low and sandy, others mountainous and steep. The climate is very hot and unhealthy. Sometimes many years elapse without rain; then horrible famines sweep away men and animals. The principal productions of these islands are *salt*, *orchal*, *dragon's blood*, *maize*, the seed of which multiplies a hundred fold, and the *castor oil* or *palma Christi*. This vegetable, which in the south of

Europe is only an herbaceous plant, becomes in Africa a tree of 30 or 40 feet in height. Its fruit, enclosed in a globulous capsule, with three protuberant sides, and covered with thorns, yields, by expression, a thick oil very much in demand, and employed as a very mild cathartic. The inhabitants subsist almost entirely upon the flesh of wild goats and hogs. For the most part, all these islands suffer from the want of trees, (destroyed by the first Portuguese) and from an insufficiency of water.

THE ISLANDS OF THE GULF OF GUINEA. — Fernando Po, Isle of Prince, St. Thomas, and Annabon are volcanic, covered with a luxuriant vegetation, and possess the productions of Guinea; but they are of too little importance to claim further attention.

Ascension Island, west of the preceding, is only remarkable for the manner in which its English garrison has succeeded in metamorphosing an arid and desolate islet, almost destitute of water, into a fertile country, furnishing foreign vessels with fresh supplies of cattle, vegetables, sea birds' eggs, and especially *tortoises*, which are taken in considerable quantities when they flock to these shores to deposit their eggs; they are then preserved in parks. Nowhere are they found larger, some weighing as many as 600 and 800 pounds.



St. Helena.

St. Helena, immortalized as the place of Napoleon Bonaparte's banishment and death, is a small volcanic island, encompassed by high perpendicular rocks, and accessible only at one point. The climate is salubrious and temperate, the aspect mournful and gloomy; vegetation, however, is flourishing in certain small and well-watered valleys. Most of the fruits and vegetables have been introduced from Europe.

MADAGASCAR. — Following the eastern coasts, we arrive opposite one of the largest islands in the world, *Madagascar*, which a chain of high mountains traverses from north to south, from *Cape Amber* to *Cape St. Mary*. The climate is agreeable and salubrious in the interior, but extremely dangerous, and even fatal, on the coasts, which are generally very marshy. This island possesses the exuberant vegetation, and the greater part of the products, of the tropical countries — rice, yams, sugar cane, maize, cotton, indigo, pepper, oranges, lemons, and dates; all kinds of timber wood; precious woods, such as the sandal and ebony; others which furnish gums, and still others which are peculiar to this island, and of which we will particularize only three — the *ravinala*, the poisonous *tanghin*, and the *pandanus*.

The *ravinala*, which grows in the marshes and on the borders of streams, resembles the palm tree in its trunk, and the banana in its fan-shaped leaves from 8 to 9 feet in length, and which furnish the Madagascans with coverings for their houses, table cloths, napkins, dishes, plates, and spoons: by piercing it at the root, an agreeable beverage is procured, and thence originated the popular name of the *traveller's tree*; oil is also manufactured of the skin which envelops the seeds, and of the farina of the latter soup is prepared. The *tanghin* is a tree of about 30 feet in height, whose oily seed is appropriated to a singular use, being employed in legally establishing the guilt or innocence of the accused, when there is no other means of proving the crime. If the accused is robust, the strength of his constitution enables him to disgorge the poison, and he is then proclaimed innocent; otherwise, he dies, and his guilt is thus attested; his confiscated property is divided into three portions, one for the chief, another for the officers, and the third for the informant. The *pandanus* is

*Ravinala.*

also a singular tree ; the inhabitants call it *vacoua*, and make use of its fruit for food. The trunk of this tree is encircled by rings ; at the root these rings produce thick fibres, which separate from the trunk and become implanted in the soil, forming curved arches, whose singular appearance has always attracted the notice of travellers. The flowers of some species of the pandanus are remarkable for their exquisite and penetrating odor. Some of them are so powerful that an apartment in which they have been placed for a few hours will retain the perfume for a month.

The *animals* are quite remarkable. The oxen, which acquire great proportions, and with which Madagascar supplies the neigh-

*Vacoua.*

boring islands, are all *zebus*, or oxen with fat humps, certain varieties of which lack horns. A large *bat*, whose flesh is said to be very delicate, furnishes an article of food. Madagascar pro-

*Macaucos.*

duces certain singular quadrupeds which are found nowhere else — the *macaucos*, or *lemurs*, a large class of monkeys, known by

the name of *monkeys with foxes' muzzles*, and whose heads rather resemble those of the dog than of the human figure. They are very agile, but indolent and fond of sleeping during the day. They are distrustful and wild, but caught young they may be easily tamed. There are several varieties, among which the *aye-aye*, surnamed *Madagascar squirrel*, on account of its resemblance to the latter quadruped; and the *galagos*, which differ from other monkeys in their enormous ears and bushy tail.

The *population*, which comprises several millions of inhabitants, is composed of a great number of strong and vigorous negro tribes; that of the *Owas*, in the centre of the island, have almost European features, a copper rather than black complexion, and appear to be descended from Arabs who have intermixed with these populations. Under a great king, an emulator of European



Owa.

civilization, the Owas had obtained sway over the whole island: Radama received the English missionaries, established schools, encouraged the introduction of our arts and sciences, and formed for himself an army, equipped and disciplined according to the European model. But he was poisoned by his wife Ranavala, who took possession of the throne, banished all foreigners, proscribed all the new customs, and commenced against her Christianized subjects horrible persecutions, which recall those of the ancient Roman emperors. Every kind of torment that could be devised was inflicted upon these courageous martyrs, and in a

single year, 1849, nearly 2000 persons, taken from all classes, sealed with their blood the testimony of their faith in Jesus Christ. Last year, however, the queen's own son, who is himself a sincere Christian, received from his mother the direction of affairs, and put an end to the persecutions.

The *Island of Bourbon*, (or of the Reunion,) north-east of Madagascar, forms a part of the cluster of the Mascarenes. The aspect of Bourbon is severe; the island erects itself like an immense landmark from the bosom of an ocean always convulsed; not a port or creek there offers a shelter to vessels. From the midst of the sombre and rugged peaks rises a volcano in full activity, whose burning lava, after gliding over the sides of the mountain, disappears in the sea, amid clouds of smoke and vapor. Although situated in the torrid zone, this is one of the most salubrious countries in the world, and its fine climate, its pure air, the abundance of its water, the freshness of its breezes, and the luxuriance of its vegetation, all combine to render it a most agreeable abode. Terrible hurricanes, which sometimes cause great destruction, are the only dark feature which such a climate presents. Sugar cane and coffee are especially cultivated there; but spices, and the best fruits of the torrid zone, may be met with side by side with the vegetables and fruits of Europe. The population consists chiefly of free blacks, of *coolies*, — Hindoo laborers, — and of French engaged in the cultivation of the island.

The *Isle of France*, which has received the name of Mauritius since it came into the possession of England, greatly resembles the preceding in its aspect and climate; but its roadsteads and ports give it a much greater commercial importance. The most striking objects in this second of the Mascarenes are its bluffs or rounded summits, and its *peaks*, or mountains of conical form, the most singular of which is the *Peter Botte*, which, on a point like that of a great obelisk, supports a vast rock, much larger than itself, to the top of which men have, however, been known to ascend. The cultivation of sugar, coffee, and indigo is most flourishing. *Shaddocks*, fruits resembling both oranges and lemons, also abound in this country. The majority of the inhabitants are composed of free blacks and French.

The *Com'oro*, north of the Mozambique Channel, interspersed with shoals and reefs, are four small mountainous islands, of a salubrious climate and the most superb vegetation. The inhabitants, a mixture of negroes and Arabs, all Mahometans, are quite civilized. France has founded an establishment at Mayotte, one of these islands.

The *Seychelles*, north-east of Madagascar, formerly colonized by France, and now occupied by the English, are chiefly celebrated for their *Cocos de Mer*, or double cocoa nuts, which, transported by the currents of the sea even to the coasts of India, were long considered a mysterious production of the abysses of ocean, possessing properties efficacious in all kinds of diseases, and the smallest fragment of which, on this account, sold for exorbitant prices; it was so expensive that the Emperor of Germany, Rodolph II., could not obtain for the sum of 4000 florins a single one of these famous *nuts of Solomon*, as they were called. These islands, the principal of which is *Mahé*, are very fertile, but of inconsiderable importance. Among them also are the *Amirantes*, almost deserted islets, not far from the Seychelles, and which are very much frequented by the inhabitants of the latter, who resort thither to engage in the tortoise fishery.

The *Socotra Island*, east of Cape Guardafui, the most eastern part of Africa, possesses an arid, stony soil, almost entirely destitute of water and vegetation. It, however, produces a great quantity of dates and *Socotrine aloes*, the best that are known. This island abounds in goats and poultry; but it contains very few oxen; it lacks a harbor, and is subject to the Imaum of Muscat, on the south-eastern coast of Arabia.

CHAPTER VIII.

THE CONTINENT OF EUROPE.

EUROPE is, like Africa, a great peninsula of Asia; but this is the only point of resemblance which exists between these two continents. In every other respect they offer a complete contrast. Africa is solid and massive, and presents in its form and in the nature of its soil a thousand obstacles to communication; Europe on the contrary, is penetrated in all directions by inland seas of every description, which, by means of commerce and navigation, place each European nation in easy contiguity with the people and products of the whole world. And not only has Europe the inestimable advantage of being thus penetrated and intersected by numerous seas, but it possesses a great number of rivers, almost all of which are navigable, or which, by the aid of canals, enable the countries of the interior to communicate readily with the sea. Here are none of those vast plateaus which, like those of Asia, are, by their high mountains and their own elevation, completely separated from the neighboring plains. Europe contains many mountains, but they are easily surmounted, and but little isolated. It seems, in certain respects, to reproduce the image of Asia: it possesses at the south, like the latter, three great peninsulas; Corea has its counterpart in Brittany, Kamtchatka in Scandinavia; the form of Europe, however, is much more original and varied. It is not surprising that this continent, although one of the smallest, has acquired a marked predominance over all the others, exciting their emulation by its incessant activity, and by the influence of its religion and sentiments, as well as by the power of its arms.

SECTION 1. BOUNDARIES OF EUROPE. — Europe is bounded on the north by the Arctic Ocean, the chief branch of which is the *White Sea*, penetrating into the land at the north of the

European continent. It has been called the *White Sea* on account of the ice, which covers it the greater part of the year, rendering it inaccessible except during three or four months. It is even deep enough to receive men-of-war; but its coasts, generally of little elevation, present almost every where inhospitable rocks, or miry swamps, and when the winds from the north-east break up the ice in the spring, terrible shocks ensue.

This sea was discovered (just 300 years ago) by an English admiral, Chancellor, who was seeking a passage to the Indies by the north of Asia, and it was for a great length of time the only sea by which Russia could communicate with Western Europe. Fish furnish the principal resource of the inhabitants of the coasts; they take prodigious quantities of them, which they exchange for all kinds of merchandise; they also consume great numbers, and often, during the winter, partly feed their cattle upon them, after bruising and reducing them to powder. Within a certain period, a new and important fishery has been established in these cold regions, viz., that of the *shark*. It possesses the two-fold advantage of destroying a great enemy of other fish, and of furnishing an excellent fat, from which an oil is extracted suitable for lamps, and held in high estimation by tanners. A single shark has yielded as much as 400 pounds weight of this fat, capable of producing from 6 to 8 tons of oil. The flesh is regarded as a dainty in these countries, and the salted shark is readily disposed of in the markets of St. Petersburg, the capital of Russia.

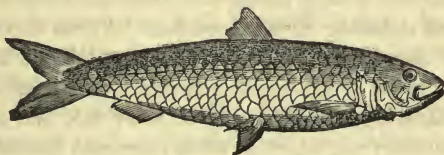
Europe is bounded on the west by the *Atlantic Ocean*, which forms on its coasts a great number of seas, individually remarkable.

NORTH SEA.—The Atlantic Ocean first forms at the north-west, between the European continent and the British Isles, a vast sea, known under the name of *North Sea*. This sea, whose waters are generally deep, and agitated by strong currents, presents at the north-east on the coast of Norway, the dangerous whirlpool of the *Maelstrom*, a terrible vortex, into which ships are often irresistibly lured and engulfed, as likewise the bears or whales which chance to cross it. As it is much less formidable in summer than in the spring and autumn, and as its course, after being directed from north to south during six hours, becomes

reversed during six alternate hours, it has been supposed that this roaring phenomenon was caused by the action of the tide and currents, counteracted by the existence of a labyrinth of submarine reefs.

The North Sea forms on its shores a considerable number of gulfs, the most remarkable of which is unquestionably the *Zuyder Zee*, a vast lake of salt water, full of shoals, difficult and dangerous of navigation, and which was produced about 600 years ago by terrible inundations, during which the waves of the North Sea, precipitated into the interior of the land by violent winds, submerged the country to a great distance, and caused nearly 100,000 persons to perish.

The coasts of this sea are the principal theatre of the *herring* fishery. The herring is a pretty fish, of a beautiful green color,



Herring.

silvered underneath and on its sides. These fish are no longer supposed to come from the polar regions; every thing seems to indicate that at a certain period they retreat into the depths of the ocean, issuing thence when instinct prompts them to seek more shallow, and consequently warmer waters, in which to deposit their eggs. When the herrings are coasting along the shores, their numbers are so prodigious, and their columns so dense, that they may sometimes be caught with the hand. Thousands of voracious fish follow these *shoals of herring*, and devour innumerable quantities. Notwithstanding this, and the exertions of the fishermen, the herrings do not perceptibly diminish, but they sometimes abandon certain coasts for others. This fishery, which, two centuries ago, constituted the wealth and power of Holland, is now principally conducted by the English. The best herrings are those which are taken farthest north. This fishery commences in June and terminates in January. The immense

nets are cast into the sea at night, and the torches attached to the boats serve to attract the fish. They are eaten fresh or salted. *Packed*, or, in other words, salted by the Dutch and *smoked*,—that is, smoked and dried, after undergoing for a time the action of salt,—the herring may be kept in a perfect state of preservation, and exported to a distance, even into the hottest countries. The *whiting* is also a fish which abounds in the North Sea. Salted, it takes the name of *stock fish*, which is also given to the dry cod. Another fish, whose flesh is solid and not very delicate, and of which great consumption is made at the north, is the *flounder*, usually 6 or 7 feet in length, but which often attains gigantic proportions. Although voracious and very strong, it is the habitual prey of dolphins and sharks.

BALTIC SEA.—East of the North Sea stretches a vast internal sea, known by the name of *Baltic*. They communicate by the broad strait of *Skagger Rack* and *Cattegat*, celebrated for the number and excellence of its *lobsters*—large species of crawfish, which attain even a foot and a half in length, and whose flesh is very much esteemed. However, one cannot truly be said to have penetrated into the Baltic Sea until he has crossed one of the three straits which obstruct its entrance—the Sound, the Great Belt, and the Little Belt.

The *Sound* is the only one of these passages which is in any degree safe; and even there are encountered, especially towards the eastern coast, shoals, which can only be avoided by daylight, with a good wind, and by the aid of native pilots. Some days vessels arrive there by hundreds, and their number is yearly augmenting, (13,000 passed through in 1837.) Every ship is visited and taxed according to the merchandise which it carries, and the annual tribute is estimated at about \$765,000, which Denmark thus levies upon the commerce of all nations obliged to pass beneath its citadels, in order to profit by its lighthouses and pilots. The navigation of the two *Belts*, which open, one between two of the principal islands of which Denmark, properly called, is composed, and the other between the most western of these and the main land, is rendered dangerous by a great number of islets and sand banks, and ships there likewise pay a duty.

The Baltic forms several large gulfs.—that of *Bothnia* at the

north, that of *Finland* at the east, and that of *Livonia*, or *Riga*, south of the preceding; all very productive of fish, but shallow, bordered with shoals, and covered with ice as soon as the winter commences. The entire Baltic presents the form of a kneeling woman, looking towards the east. The Gulf of Bothnia represents her head, neck, and breast, the Gulf of Finland an extended arm, which grasps St. Petersburg, whilst the Gulf of Riga seems suspended on the arm like a bag, at the bottom of which is found the important city of Riga.

Like all internal seas, the Baltic has scarcely any tides; but as it receives a great number of rivers and fresh water affluents, its waters, containing less salt than those of the ocean, freeze more easily, in consequence of which, navigation is interrupted by ice during three or four months of the year. It is of little depth, (300 feet at most,) and the pilots are obliged to pursue well-known routes, or, so to speak, channels, in order to escape the shoals; for thick fogs frequently prevent their deriving any benefit from the numerous lighthouses, placed on the eastern coasts. The water conveyed by so many rivers into the Baltic, creating a repletion, occasions strong currents, which direct their course towards the North Sea, through the straits, and in the spring sweep thither the ice, which, when intercepted in its progress by the west winds, renders navigation difficult. All these circumstances combine to render the Baltic a very dangerous sea, and yet commerce is dependent upon it for obtaining many of the products which are most indispensable to our welfare — wheat, wood, hemp, flax, tallow, &c.

THE ENGLISH CHANNEL. — South-west of the North Sea, and of the *Straits of Dover*, which serve as a passage from one to the other, is found the *English Channel*. It is one of the most frequented in Europe, and at the same time one of those in which the most shipwrecks occur, owing to the triple action of sudden and violent tempests, of strong westerly currents, and of tides more considerable than are met with in any other portion of the European continent. Many are the English and French vessels which, after successfully accomplishing voyages to the most distant countries, have been dashed to pieces in this sea, at the moment of arriving in port.

This Channel is very fruitful in fish, and furnishes the borders with abundant resources. But of all its products the most celebrated and most important are the *oysters*, considerable beds of which exist near Cancale, at the bottom of a bay situated south-west of the Channel. This valuable fishery, subject to the strict rules of a regular exploration, supplies commerce every year with about a hundred million of oysters. Nevertheless, the number does not diminish, which is explained by the fact that each oyster lays annually 50 or 60 thousand eggs.

They are usually collected on the banks with the dredge, a species of large iron rake, which is dragged over the sand at the bottom of the sea. The little ones are immediately rejected; the rest are deposited in beds or basins dug on the shore, and into which the waters can penetrate at high tide. There they grow large and fatten, for the oyster requires four or five years to attain the ordinary dimensions of those which are served on our tables.

Various excellent fish are taken in the English Channel, such as *herrings*, which come thither from the North Sea; *mackerel*, fish from one to two feet in length, which are eaten fresh, and enormous quantities of which are salted, on all the European coasts; *soles*, whose flesh is highly esteemed; and *rays*, which, like the soles, are flat fish, but of much larger size.



Ray.

IRISH SEA.—North-west of the English Channel, between the two largest divisions of which the group of the British Isles is composed, (Great Britain and Ireland,) is the *Irish Sea*, where occur the highest tides in Europe, particularly in the Bristol Channel, towards the south-east.

Few countries in Europe are so favored in fresh and salt water fish as the British Isles; nowhere are encountered such multitudes of sea birds, (whose eggs give rise to an important traffic,) although they are procured, at the risk of human life, from the sides of the rocky precipices, where they are deposited by the parent birds. The Irish Sea, in particular, abounds in herrings, mackerel, cod, and salmon.

Salmon are met with in all the northern seas, from whence they every year ascend the tributary rivers in order to deposit



Salmon.

their eggs; but nowhere is the fishery so productive as in the British Isles. This is a fish from two to four feet in length, weighing ordinarily from twenty to thirty pounds, whose excellent flesh is eaten fresh or salted. The salmon can scarcely

cross a dam of any elevation ; therefore it is chiefly at the foot of waterfalls, and at the moment when these animals are struggling to conquer such obstacles, that they are captured in abundance. There is a universal complaint of a rapid diminution in the number of these fish, which encounter dangerous enemies, not only in man, but also in seals and other cetacea.

BAY OF BISCAY.—The Atlantic Ocean forms also, on the western coasts of Europe, a sea known under the names of *Gulf of Gascony*, or *Bay of Biscay*, almost as dangerous as the English Channel, and much more destitute of good harbors. As it is very deep, the waves, driven by the north-west winds, lash the coasts without check or impediment, breaking furiously upon the steep declivities of the shore ; thus every ship which is stranded there is inevitably lost.

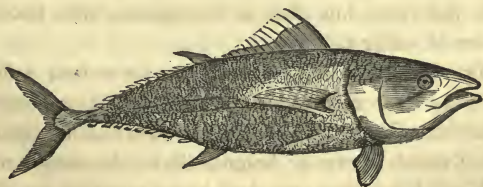
This sea contains great numbers of *torpedoes*, those singular fish, which discharge at the touch such painful electric shocks. Some of them have been taken which weighed as many as fifty pounds, but their flesh is soft and disagreeable. Another fish which appears in vast numbers in the Bay of Biscay, and is the object of a considerable fishery, is the *germon*, whose white flesh is held in high estimation. But the fish of which these waters are most productive is the *sardine*, a small fish of the herring species, which every year, at the commencement of autumn, quits the depths of the ocean, and approaches the shores in order to deposit its eggs. Its dense ranks then offer to the populations of the coast a certain and easy prey. Thus, in some of the provinces of France, even the peasants abandon for a time their usual occupations, to appropriate their share of this annual manna. A single cast of the net has sometimes captured sufficient to fill forty casks. This fishery, which commences in May and terminates in November, furnishes, moreover, a lucrative employment, not only to the men, but also to the women, who take part in the operation of salting.

THE MEDITERRANEAN.—Owing to its extent and importance, this may be considered as the third of the great seas of Europe, and like the two preceding, it forms many distinct seas, almost all of which serve as boundaries to the continent. It is naturally divided into two principal parts, to which we shall successively invite your attention.

The *Western Mediterranean* extends between Europe and Africa, from the Strait of Gibraltar to the point where these two continents are again rendered contiguous, by means of a large intervening island, (Sicily.) It forms no distinct seas, but only a few gulfs, of which the best known are those of *Genoa*, at the north-east, and that of *Lyons*, the latter so called on account of its tempests, the danger of which is aggravated by low and miry coasts, and by the absence of good ports.

The Mediterranean nourishes the polypi which produce the finest coral. This is one of the most precious substances of the sea, and from the remotest times the brilliancy of its color, has given it a reputation among men, who have converted it into various ornaments — bracelets, necklaces, and trinkets of every description. The coral is procured during the three hottest months. For this purpose, a machine is employed, composed of two heavy sticks placed crosswise ; a net in the form of an open purse is attached to the extremities of each stick. The fishermen drag this machine across the rocks at the bottom of the water. The stalks of the coral, with which it comes in contact, break, and the branches fall into the nets, or are caught on the tow with which the wooden crossbars are enveloped. The fragments, which are detached and remain at the bottom of the sea, are obtained by the fishermen, who dive in search of them when they are not at too great a depth. This exploration, which is pursued especially towards the east around the large islands, and in the straits, is nowhere of more importance than on the northern coast of Africa, (Algeria,) whither it every year attracts many hundred boats.

A still more important fishery, which is prosecuted throughout the Western Mediterranean, is that of the *tunny*, a large fish



Tunny.

from three to six feet or more in length, weighing sometimes many hundred pounds, and whose flesh, of excellent quality, is eaten fresh, salted, or prepared with oil. Issuing in the spring from the depths of the sea, these fish coast along the shores in innumerable legions, and advantage is taken of this opportunity for capturing them. The fishery of the tunny is conducted in two different ways — by the *thonaire*, or by the *madrague*. For the former, boats ranged in a circle around the shoal of tunnies, whose approach has been signalized, encompass these animals with nets, whilst they, intimidated by the noise, and increasing their speed in proportion as they find themselves contracted in a narrower space, in vain strike the boats with their tails, and are finally drawn near the shore and killed by blows of the boathooks. The *madrague* is a kind of enclosure constructed in the sea, a perfect labyrinth of nets, into which the tunnies, as they glide along the bank, are directed by a succession of avenues leading to the *chamber of death*, whence they cannot make their escape, and where they are killed. The troops of tunnies are usually preceded by sardines and followed by dolphins.

The Mediterranean seems also to be the native element of the *anchovies* — small fish of the same family as the sardines and herrings. The anchovies have always been to the nations of the Mediterranean what the sardine is to the populations of the coasts of the ocean. Those of Provence, (between the Gulfs of Lyons and Genoa,) are thought to possess a superiority over all others. The heads of these fish are cut off, and the bodies, packed in brine, are annually transported in enormous cargoes to the neighboring market of Beaucaire, whence they are diffused throughout the world.

Among the various kinds of fish should be mentioned two, celebrated even in the times of the Romans — the common *muræna*, a carnivorous and voracious fish, of elongated form, which was so highly appreciated by the wealthy senators of Rome, that one of them, Pollio, was base enough to fatten them in his fish ponds with the flesh of his unfortunate slaves; and the *rouget grondin*, or red gurnet, with variegated reflections, a delicious fish, for which these same Romans incurred the most foolish expenses; they nourished them in ponds, and had them conducted through

small channels even under their banqueting tables, in order to be sure of eating them fresh.

The *Eastern Mediterranean* is a basin generally as placid as the western portion, and where the tides are likewise almost insignificant. It forms at the south, on the coast of Africa, the *Gulf of Sid'ra*, and *Gulf of Ca'bes*—labyrinths of shoals and sand banks, on which ships are in danger of striking and perishing. Upon the coast of Europe it forms a very great number of distinct seas, of which we shall speak in detail.

ADRIATIC SEA, OR GULF OF VENICE.—You will first observe on the map a vast gulf which penetrates deeply into the land, forming in its southern part a broad strait, that of *Otranto*; this is the *Adriatic Sea*, or *Gulf of Venice*, all the north-western part of which is encumbered by earthy deposits, forming salt marshes or lagoons, and sandy islands, on which is built the celebrated city which has given its name to the gulf.

In this sea, as likewise throughout the Mediterranean, are found many *cuttle fish*, (of which we have spoken elsewhere.) The black liquid, with which this animal obscures the water to escape its enemies, is much used in Europe. Being dried, it furnishes a brown color, which is employed in painting under the name of *sepia*. There also are obtained the largest *oysters* in Europe, many *anchovies*, *tunnies*, and *mackerel*.

IONIAN SEA.—The *Ionian Sea*, south of the preceding, abounds in *tunnies* and *swordfish*. The latter, declared enemies of the tunnies, sometimes attain a length of 18 or 20 feet, and a weight of 400 pounds. They are especially remarkable for a muzzle armed with a kind of solid blade, which has entitled them to the epithet of *sword of the sea*, and with which they defend themselves against their enemies. The agility with which they are endowed, and the weapon with which they are provided, render the pursuit of them difficult, and even dangerous. They often break the nets of the fishermen, who are obliged to harpoon them in the same manner as the whale. Their flesh is good, and may be preserved with salt.

This sea forms two remarkable and variously celebrated gulfs. At the east, the *Gulf of Corinth*, over which regular breezes,

blowing in different directions, twice in twenty-four hours, drive ships from west to east from ten o'clock in the morning until midnight, and from east to west during the night and early morning. At the west, the *Gulf of Taranto*, whence the ancients procured the mollusk, in the interior of which was found a small sack, containing a coloring substance, that they employed in imparting a *purple* dye to the richest stuffs. At the present day diligent search is made for the *prima marina*, one of the largest bivalvous (two shelled) mollusca, which yields a species of long reddish silk, so soft and fine that it is woven in Italy into fabrics of admirable delicacy.

THE ARCHIPELAGO. — Farther east, between the European continent and Asia Minor, is the *Archipelago*, (or *chief sea*,) studded with islands, whence we commonly designate any sea which is in like manner interspersed with numerous bodies of land. As we have already stated, it is in these regions and on the coasts of Syria that divers obtain the finest *sponges* with which commerce supplies us. To enable one to see them distinctly, the water must be calm, and not more than 30 feet in depth. This fishery is attended with considerable danger, and not without emotion does one behold two men set forth in a little boat, naked, and armed only with a large knife attached to their leather girdle. They dive alternately, and soon reappear, usually bringing in the hand a sponge. At night they return home, exhausted with fatigue, bleeding at the nose and ears, and esteeming themselves fortunate to have escaped the sharks.

SEA OF MAR'MORA. — This placid and tranquil sea, whose shores are bordered with country seats, is situated north-east of the Archipelago. It derives its name from the principal of its islands, where great quarries of white marble (*marmor*) are still explored, as also a species of clayey earth known by the name of *sea foam*, of which pipes are made, celebrated throughout the world.

At the entrance and outlet of this sea are found two famous straits, which, by formidable fortifications, prohibit the approach of men-of-war — the *Strait of Dardanelles*, usually covered with merchant vessels and which resembles a broad and beautiful

river, that can easily be crossed by an expert swimmer, (a feat which was accomplished by the celebrated poet Byron;) and the *Strait of Constantinople*, with which no other can be compared in the beauty and picturesqueness of its shores, as well as in the safety of its anchorage; but the current is so rapid in this channel that it can only be ascended, when a vessel seeks to enter the Black Sea, by the aid of a violent wind or powerful steam-tug.

THE BLACK SEA. — Why it is called the *Black Sea* is unknown. It is far from being disagreeable or dangerous. It was at first called *axenos* (inhospitable) by the Greeks; but on further acquaintance with it they changed its name to *euxinos*, (hospitable.) Probably no sea of equal extent is more safe. In winter it is bordered with a thick layer of ice, which sometimes extends to a great distance from the shore.

The Black Sea teems with fish; there are found *sardans*, which differ little from the tunny, *mackerel*, *turbots*, *sharks*, &c. The most important fisheries are carried on in the *limans*, a species of fresh water lakes, which form at the mouths of the rivers that empty at the north of this sea. These rivers drift a considerable quantity of slime, which their turbid waters, driven by the waves, deposit in front of the lake, in such a manner as to form by degrees a tongue of land, usually verdant, and which protects the liman from the invasions of the sea, only leaving an aperture through which the waters of the river can escape. The limans furnish the neighboring populations with an abundant supply of one of the articles most indispensable to life, viz., *salt*, which crystallizes of itself during the heat of summer, and is collected among the mire on the borders of ponds.

SEA OF AZOF. — This little sea, connected with the preceding by the *Strait of Yenikale*, is not more than 30 feet in depth, and only 7 throughout the northern part, where the ports are situated whence so much grain is exported to Europe. It is frozen from November to April. Its waters, brackish, rather than salt, are extremely fruitful in fish. They retreat in summer, when the mire is left bare for a breadth of several leagues; thence arise dangerous fevers, and the name of *Putrid Sea*, which is given to the western gulf. Much salt is obtained from

this sea. Its navigation is moreover dangerous, on account of the shoals, notwithstanding the lighthouses and floating beacons which the government has established there.

The boundaries of Asia and Europe, on the land side, have already been defined.

SECT. 2. PENINSULAS OF EUROPE.—The peninsulas of Europe are not only more numerous, but they are more important, than those of Asia, since they compose nearly a fourth part of the entire continent, while in Asia they constitute only a fifth. They are generally much more indented, and their form and situation offer greater advantages.

SCANDINAVIA.—The great peninsula of Scandinavia, between the Baltic, the Arctic, and the North Sea, bears some analogy to Kamtchatka, but it inclines towards the south-west and the centre of Europe, and is infinitely better sheltered and less cold.

The *aspect* of this country is generally that of an immense forest, with here and there cleared districts, especially towards the south. This aspect, however, varies considerably in different localities. The western portion, which extends from *Cape North* to *The Naze*, and which bears the name of *Norway*, is a country almost entirely covered with mountains, which, instead of valleys, have at the west a multitude of *fiords*—long arms of the sea between perpendicular rocks, by means of which the waves and fish of the ocean penetrate even to the foot of the snowy summits, and whose shores and margins are occupied by towns built of wood, or by isolated cottages. The eastern part, known under the name of *Sweden*, is composed chiefly of plains, more or less cultivated, or covered with forests.

The *climate*, generally cold, becomes more and more severe as we advance towards the north of the peninsula into the country called *Lapland*, where the summer scarcely lasts two months and a half, during which the vegetation develops with such rapidity, that *the grass may literally be seen to grow* during the first warm days. These summers, brief as they are, are rendered very hot by the length of the days, the sun remaining above the horizon for several weeks in succession. The inhabitants are then incommoded, principally in the vicinity of the marshes and woods, by

innumerable swarms of gnats, almost imperceptible to the eye, but with an envenomed sting. In the winter, on the contrary, the sun is invisible during the same length of time; but the gloom of this long night is relieved by the very brilliant *auroræ boreales*, or by the brightness of the moon, which furnishes a sufficient degree of light for the performance of all indispensable occupations. During these rigorous winters, the sky is almost always serene, and a solid and permanent snow facilitates travelling in sledges; thus, in winter, visits are chiefly exchanged, and great journeys undertaken, which are accomplished with extreme rapidity. In short, the climate of Scandinavia is much less severe than that of Asia in the same latitude. This is particularly apparent in Norway, whose coast, protected from the north-east winds by high mountains, is tempered by the proximity and currents of the ocean. Thus, while in Siberia all cultivation ceases beyond the 60th degree, in Norway the fields are sown as far as the 70th, and the sea does not freeze around North Cape, situated even beyond that point.

Minerals, principally *iron*, *copper*, and *silver*, are mined in Scandinavia, forming one of its principal resources. We shall refer to them in connection with the mountains of this country.

Vegetables. — The vegetation is naturally limited, in conformity with the climate of the country. Apples, pears, cherries, and other fruits of temperate Europe, thrive, however, in the southern part of Sweden, and on the sheltered coasts of Norway. Farther north, all fruit trees cease to prosper; but as if to indemnify these unfortunate regions, divine Providence has disseminated in these latitudes a great variety of *blackberries*, (or mulberries — *rubus*,) whose delicious fruits would be eaten with pleasure even in our countries. The *blackberry of the poles*, among others, yields a sweet, aromatic, and refreshing berry, which partakes of the character of both the strawberry and the raspberry, and of which the inhabitants make delicious conserves and beverages.

Wheat and other *cereals* succeed moderately well in a portion of Scandinavia. Farther north only *barley* is sown, and even that does not every year reach its maturity; in most seasons, it is necessary to cut it when green, and complete its ripening in an

oven. This humble grain, which prospers in all climates, is one of the most precious gifts which Providence has bestowed upon the Scandinavians. It is the only one which can attain its growth during the short summers of Lapland, of which it constitutes the sole crop. Elsewhere, as in Germany, or England, the greater part of the barley is employed in the preparation of beer; here, however, it is used for bread. If the year is poor, and the barley does not ripen, great sufferings result in consequence, and the deficiency must be supplied by a bitter bread, made of the tender and inner bark of the young pines, or by that of a superior quality, which can be prepared of the ground Iceland moss.

The *mosses*, or more strictly speaking, the *lichens*, are, in fact, another precious resource with which the Creator has endowed the poor inhabitants of these countries. That which is commonly known by the name of the *Iceland moss* (from the name of a large island, of which we shall speak hereafter) may be used in the manufacture of bread, after being soaked in water, in order to remove its bitter taste, and then dried and reduced to powder. Sometimes it is cut up, and boiled in three or four successive waters, to extract its harshness and purgative quality; it is then cooked with milk, and when cold, forms an excellent and very nourishing jelly. It also furnishes a remedy for coughs; and it may be employed in the composition of sea bread, because neither worms nor the salt air has any influence on the lichen. The very existence of the Laplander may be said to depend upon the *reindeer moss*. This lichen covers entire leagues of sterile land, springing up spontaneously where no other plant could exist; the reindeer, gifted by Providence with an extraordinary acuteness of scent, easily recognizes the presence of this alimentary substance, even when it is buried beneath several feet of snow; by scraping with its feet, and digging with its muzzle, it succeeds in reaching the plant upon which it subsists.

To conclude the enumeration of the principal alimentary plants of these regions, we must mention the *angelica*, which is cultivated in our gardens, but which there grows wild in the mountains. We eat its green stalks, preserved in sugar; whereas the

Laplanders peel it and eat it raw while it is yet tender. They, however, prefer its root, possessing a pungent odor and a sweet, somewhat acidulated, and hot taste. They dig it before the stalk is grown; dry it, and chew it instead of tobacco, regarding it, moreover, as an excellent preventive against all kinds of maladies.



Angelica.

Nor are these all the useful plants of Scandinavia. We have yet to speak of its magnificent woods, vast quantities of which it annually exports to the principal seaports of the west. Norway, in particular, furnishes England with the best wood for naval purposes — one variety of *pine*, especially, (known by the names of *Sylvester pine*, *pine of the north*, *pine of Riga*, and *Scotch pine*,) is considered to be peculiarly adapted for ship building, and preferable to any other for the masting of vessels. Its perfectly straight trunk often rises to the height of a hundred feet without a branch, and terminates in a pyramidal summit. It is

brought to us from all the countries bordering on the Baltic Sea. The *fir trees*, which form superb forests, remarkable for the absence of all other vegetation, are still more gigantic, and attain from 150 to 180 feet in elevation. These furnish very fine timber, also much *pitch* and *tar*, which latter substance is employed in tarring ropes and calking ships.

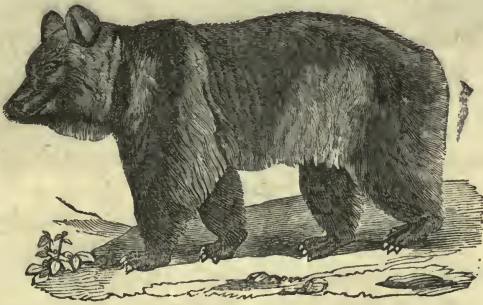
Another tree which is also of great benefit to the regions of the north, is the *birch*, the most northern tree which exists, but which, more and more knotty and stunted in proportion as we approach the pole, finally ceases to grow towards the 70th degree of latitude. It renders the most signal services in all these countries, notwithstanding the softness of its wood; the young branches are



Birch.

used for making baskets and brooms; a very tolerable paper may be manufactured of the different coatings of its bark; it is employed for covering cabins, and in time of dearth the inner pulp is eaten instead of bread; the leaf yields a dye, the sap a fermented liquor in use throughout the north, and the charcoal may be used in the composition of printer's ink; these beautiful trees also serve to adorn the landscapes, which without them would be absolutely gloomy and desolate.

The *animals* of Scandinavia do not present the same attraction of novelty possessed by most of its plants. They are already almost all known to us. Our domestic animals would thrive even in Lapland; but their place is supplied by the *reindeer*, which renders even greater services to the Laplanders than to the inhabitants of Siberia. The *fur-clad animals*, — *elks* and *gluttons*, — of which we have also spoken in connection with Siberia, have become rare. This is not, however, the case with the *wolves* and *bears*, which, unfortunately, are very abundant.



Bear.

The skin of the latter is one of the most useful peltries of the northern countries; of it are manufactured mattresses, bonnets, muffs, robes, gloves, carriage carpets, &c. A curious little animal of these regions is the *lemming*, a species of rat, of the field mouse genus. This rodent inhabits the mountains of Lapland, where each family digs itself a burrow. At irregular periods, and, as it appears, especially at the approach of the severe winters, of which they seem to have a presentiment, the lemmings assemble

in immense numbers in certain districts, and emigrate in a body to the countries where a less rigorous season awaits them. Formed in dense columns, which seem to march parallel with each other, they direct their course in a straight line to the end of their



Lemming.

journey. Nothing arrests their progress ; rivers are crossed by swimming, and mountains climbed ; throughout the night and morning, these animals pursue their route ; they encamp during the day, and in whatever field they chance to take up their quarters, every thing is ravaged as if by fire. These migrations are sometimes very long ; and scarcely do a hundredth part regain their primitive country, such havoc is made among them by beasts of prey.

Besides various *birds of prey*, Scandinavia produces also considerable quantities of *wild geese*, whose feathers and flesh are highly appreciated, and flocks of *swans*, the largest and most beautiful of the swimming birds of Europe. My readers are

doubtless acquainted with its white plumage, the grace with which it swims, and its maternal solicitude for its young, which it carries on its back until they are in a condition to swim. When a winter threatens to be severe, the swans quit the northern regions for



Swan.

more southern and warmer climes. The flesh is tough, and seldom eaten, but their down, of extreme delicacy, is of considerable value. Much use is also made of the swan skin instead of fur.

But of all the birds of this species, the most invaluable to these regions is the *eider duck*, which is an important object of pursuit on the coasts of Norway and the neighboring islands. The eider skins are used for making under garments, which in these rude climates serve as an admirable protection against the cold; and these birds also furnish every year, without any sensible deprivation, an enormous quantity of the finest down. This precious substance is, at the same time, so firm and so elastic, that two handfuls are sufficient to wad a coverlet, which combines with extreme lightness a greater warmth than that of the best woollen covering. Thus the principal occupation of the inhabitants is the collection of this indispensable article; and to obtain it they shrink from no danger, scaling abrupt rocks at the peril of life, or suspending themselves by ropes, in order to descend to the cavities where the eider has established her nest. These nests are a kind of property to the peasants, and each is permitted to enjoy unmolested the produce of those which are deposited on his own land. They are constructed of sea-weed, and lined with a

very fine down, which the female plucks from her breast. The hunter, gently lifting the bird from its nest, possesses himself of the down and eggs, leaving one of the latter, however, lest the poor mother should abandon the brood. This theft is repeated several times, until the male is compelled to strip his own breast for the sake of his little ones. Then, at length, the pair are suffered to hatch their young in peace, and seem to cherish no recollection of past wrongs. One man may in a single year amass from 50 to 100 pounds of down. Government bestows particular attention upon the preservation of these precious birds, and a law imposes a heavy fine upon any person who kills one of them.

The *population*, of a fair complexion, with blue eyes, and of lofty stature, is courageous, proud, loyal, and hospitable, but by no means numerous. The peasants are very well informed, especially in Norway, where their manners are preserved more pure than in Sweden. In every village there is a school, and for the inhabitants scattered among the mountains there are *itinerant teachers*, who spend a week alternately in one house and another for the purpose of imparting the first rudiments of education to the children, whose future progress is superintended by their parents. Few people evince such a decided taste for reading. No habitation is so poor that it does not contain a Bible, a collection of psalms, and a few prayer books; and although often at 8 or 10 leagues distance from a church, rarely does any family fail to attend divine service, both winter and summer. All the Scandinavians belong to the Protestant faith, and are endowed with a religious sentiment, less enlightened perhaps than zealous, but at all events very remarkable.

The *Laplanders*, who, few in number, (9000,) occupy the north of the peninsula, are of Mongolian origin, and present a complete contrast to the Scandinavians in their small stature, yellowish skin, and smooth, black, and shining hair. They subsist principally on the milk and flesh of the reindeer, and upon fish or game. Of this milk, which is very thick and nourishing, they make butter, which is of inferior quality, and cheese so rich that it burns like oil. In winter each family kills one or two reindeer a week. In summer they regale themselves upon the epidermis of the pine or birch, saturated with oil, or upon the stalks

of the angelica. They are passionately fond of tobacco, as likewise of tallow, oil, and the frozen blood of the reindeer. Their chief pleasure consists in apathetic indolence, and if they have tobacco to smoke, or a glass of brandy to sip, no one experiences less than they the miseries of this world, or anxieties for the future.

The Laplanders are strong and robust. They are inured to hardships from their birth; the infant being placed on a bed of moss, in a wooden cradle, the mother carries this cradle on her back, plants it like a stake in the midst of the snow, or deposits it near the hearth amid clouds of smoke. Many of these children die for want of care or medical aid; but those who survive enjoy vigorous health. The dwellings of the Laplanders are cabins of pine wood stuffed with moss. In the centre is the hearth, where they maintain a fire during nearly the whole year, and whence the smoke escapes through an aperture made in the roof. The low and narrow door of the cabin has a southern exposure. They pursue the chase shod with clogs of fir wood three feet in length, rising in points at the two extremities, and bring back peltries, which afford them a profitable trade.

The Norwegian and Swedish governments have spared no pains in imparting the gospel to the Laplanders, and giving them elementary instruction. Parishes have been founded among them, and provided with pastors, or missionaries, and catechists, who address the Laplanders in their own tongue, and who, more effectually to combat their superstition and idolatry, share their mode of life and their numerous privations. Fixed schools and itinerant teachers have been established in these different parishes, for the greater part of the Laplanders have continued nomadics, with the exception of some few who are located farther south, in the neighborhood of some Swedish colonists. Among the nomadics may be distinguished the *Laplanders of the mountains*, who roam throughout the year with their reindeer, pass the winter in the low country, and then gradually ascend in the direction of the mountains, whither they resort during the summer to avail themselves of the excellent pasturage there afforded, and more especially to avoid the cruel attacks of the gnats and gadflies which then besiege their cattle: always wandering and living in

tents, these Laplanders lead a miserable existence and endure great privations. The *Laplanders of the forests* also spend the winter on the borders of the Gulf of Bothnia; but during the remainder of the year they live in the woods, having fixed abodes, and emigrating from one to the other with their herds, which are suffered to graze at random. They enjoy leisure and ease, and have time for fishing and recreation; they are more neat in their habits, and have suitable clothes for attending church, near which they almost all possess a small house, where they spend their Sundays and feast days. The reindeer constitutes the wealth of all alike; some raise as many as 1000 or 1200; he who owns but 500 is only a moderate proprietor. Notwithstanding the aridity of the soil, the long winter storms, and a sky often obscured by heavy clouds, nothing can wean the Laplanders from their gloomy country, and those who have been transported elsewhere have either died of grief or speedily returned.

JUTLAND. — This peninsula, situated between the Baltic and the North Sea, projects from south to north, opposite Norway, and terminates in Cape Skagen.

Aspect. — With the exception of a chain of sandy hills, which traverse the peninsula, all Jutland is composed of very low plains, dotted with lakes; these plains were formerly almost entirely covered with forests, of which they are now nearly destitute. The coasts, which lack good ports, are dangerous and fruitful in shipwrecks. The eastern coasts are very deeply indented by gulfs or *fjords*. In 1825 the *Lymfjord*, the largest among them, even submerged, as it had often done before, the narrow strip of land which at the west separated it from the sea, in consequence of which the northern part of Jutland now forms an island.

The *climate*, influenced by the vicinity of the sea, is foggy and damp, and exposed to violent winds, which sometimes uproot entire forests.

In *minerals* it is almost wholly deficient.

Vegetation. — Its principal wealth consists in vast and excellent pastures, almost as fresh and green as the beautiful meadows of England. Great quantities of cattle are raised, which supply a part of the neighboring countries with butter. Grapes cannot ripen there — scarcely do our ordinary fruits; but cereals succeed

every where, and yield considerable products. The Jutland rye is particularly renowned.

No cereal except barley can sustain more severe cold than the rye; it is, therefore, found in abundance in all the countries which surround the Baltic, and possessing, as it does, the advantage of thriving in thin, sandy, and poor soils, it furnishes an excellent aliment to countries which could maintain very few inhabitants without this gift of Providence.

The rye bread, on which about a third of the Europeans subsist, is much less heavy than that of barley, although inferior to the wheat; thus in the countries of Northern Europe, where rye, barley, and oats alike flourish, the rye is used for bread, the barley for beer, and the oats are assigned to the horses. Rye and wheat are often sown in the same piece of land; this mixture is called *meslin*; the bread which is made of it is of good quality, and very nourishing. Rye is also sown to be cut like grass; it then furnishes very excellent fodder. The straw, which is hard, solid, and flexible, is used for tying up vines and trees, binding wheat sheaves, thatching cottages, and making mats, straw hats, &c.

The *animals* of Jutland present nothing remarkable. It no longer contains *wolves*, but is tolerably provided with game, among other species *hares*, famed for their savory flesh. Swans and eider ducks live at liberty in the fiords of the north. The most celebrated animals of this country are the *horses of Holstein*, (at the south of Jutland,) which are large, strong, and elegant, and highly esteemed by foreigners: this country has long furnished the continent with the beautiful race of dogs, spotted with black and white, known under the name of *Danish dogs*, and those little *pug dogs*, with black muzzles, which were so much in vogue in France sixty years ago.

The *population* is composed of *Danes* (who are of the Scandinavian race) towards the north, and of *Germans* at the south, (Sleswick and Holstein,) — populations inimical to each other, and which with difficulty maintain a good understanding. All live by agriculture and the fishery; their manners are simple and quite pure; the peasants manufacture their own garments, furniture, and implements, like the Swedes and Norwegians. They

are still better informed than the two other Scandinavian nations ; there is scarcely one inhabitant in a thousand who cannot read. They are all Protestants.

BRETAGNE. — This peninsula, situated between the English Channel and the ocean, is a country of a generally wild and gloomy aspect. The coasts, composed of masses of granite, bristling with capes, and intersected by multitudinous gulfs, incessantly beaten by the winds, and by a stormy sea with enormous waves, present in many places a sinister aspect. Navigation is rendered dangerous by many islets and shoals ; good harbors are, however, to be found, in which excellent seamen are reared. The interior, traversed by small granitic mountains of little elevation, constitutes a kind of plateau, for the most part sterile, consisting of waste lands covered with heath. Elsewhere are pastures, and fertile but poorly cultivated fields.

The *climate* is quite mild, tempered as it is by the vicinity of the ocean ; but the sky is often gloomy and foggy, and rain is very abundant : this is the dampest country of this portion of the continent.

With respect to its *mineralogy*, it produces *granite*, a very hard stone, much esteemed for building, *iron ores*, a little *pit coal* and *argentiferous lead*, that is, lead mixed with silver.

Vegetables. — Bretagne, while it produces wheat and other ordinary cereals, may be said to excel all other countries in *oats* and *buckwheat*. Oats, which succeed in all temperate climates, are more especially the cereal of the mountainous or cold countries ; in this respect it has some analogy to barley. Much of it is given to horses ; but in poor countries, like Bretagne, coarse black bread is made of it, which is not, however, very substantial, since it is estimated that $78\frac{1}{2}$ pounds of wheat contain as much nourishment as 100 pounds of oats. By divesting the grains of their hulls, *groats* are prepared, of which very nourishing porridges and soups are made. The *buckwheat*, or *black wheat*, the cultivation of which was introduced into Europe by the Saracens or Arabs, is a cereal which grows in all countries, but especially in dry soils. Of it is made a black, flat bread, which is tolerable when fresh, and which boiled with milk is very palatable. Its grain serves also for the food and fattening of poultry. It abounds in Bretagne.

The principal product of this peninsula, after the two above mentioned, is the *flax*, a plant whose slender stalks are enveloped in fibres of which thread is prepared, which is used in the manufacture of cloth, laces, and other delicate fabrics. The flax of Bretagne is inferior in quality to certain foreign flaxes, and unfortunately it is necessarily sold at a high price; nevertheless it gives rise to a great commerce, and to the manufacture of considerable cloth. The farina of flax is much used in medicine, in the composition of soothing applications. From the seeds of this vegetable a rich oil is expressed, very much employed in the arts, and particularly in painting. *Hemp* is also cultivated quite extensively in Bretagne.

The *animals* are entitled to no especial mention; horned cattle are abundant, and furnish butter of high repute, both when fresh and salted; the *bees* also produce a great quantity of honey and wax.



Bretons.

The *population*, of Celtic race and tongue, are generally dejected and gloomy, of harsh and coarse manners, sunk in pro-

found ignorance, and attached to their ancient customs. The Bretons are almost without exception Catholics, and extremely devoted to their religion and to their priests. They are courageous, gifted with lively imaginations, and conceal beneath a stern and rough exterior a great depth of goodness and sensibility.

THE SPANISH PENINSULA. — This peninsula, which comprises Spain and Portugal, and which is sometimes simply designated by the name of *Spain*, or the *Peninsula*, is situated between the Bay of Biscay at the north, the ocean at the west, the Strait of Gibraltar at the south, and the Mediterranean at the east. It projects into the sea a considerable number of variously noted capes, the principal of which are *Cape Finisterre* at the north-west, *Cape Roca* at the west, *Cape St. Vincent* at the south-west, those of *Trafalgar* and *Tarifa* at the south, those of *Gata* and *Palos* at the south-east, *St. Martin* at the east, and *Cape Creux* at the north-east. Spain is more effectually separated from the rest of Europe by the Pyrenees Mountains, which are difficult of access, than the British Isles are by the sea; for in our day the ocean unites rather than divides nations.

Aspect. — Spain is an extremely mountainous country, forming a succession of plateaus, which towards the south gradually diminish in height; it resembles a vast fortress, whose most insurmountable ramparts are at the north, and which offers no passages of any great width, except on the side opposite Africa. The face of nature in the greater part of interior Spain is uniformly sad and gloomy, presenting bare and rugged mountains, and immense plains destitute of trees, — silent, solitary, and partaking of the wild aspect of the African deserts. Its coasts wear a much more fertile and smiling appearance, varying greatly, however, from north to south; for on the borders of the Gulf of Gascony the vegetation is that of temperate Europe, whilst near the Strait of Gibraltar it may be likened to that of Northern Africa.

The *climate* is temperate, and even severe, in the provinces of the north; dry and hot, or dry and cold, according to the seasons, in the central plateaus, which are swept a part of the year by terrible winds; and damp and hot in the provinces of the south-east, which are washed by the sea. This last portion is exposed to

the disastrous effects of the *solano*, a hot wind which, issuing from Africa, almost instantaneously blasts vegetation. It produces also a dangerous impression on the brain, excites the imagination, and inflames the passions; and this is always the time when assassinations and murders are most frequent.

Minerals are one of Spain's principal sources of revenue, (they are less abundant in the western part of the Peninsula, which forms the kingdom of Portugal.) No country in Europe furnishes so much *lead* and *mercury*; it produces, besides iron and copper, a little *silver*, *tin*, *pit coal*, and an abundance of *salt*, in mines or on the coasts, the most renowned of which, that of Setubal, (Portugal,) is exported in considerable quantities to the countries of the north, because it is more effectual than other salt in the preservation of meat and fish. Its *marble* and *alabasters* have a certain reputation. The products of the lead and mercury mines are both extremely profitable.

Vegetables. — The vegetation differs essentially in the northern and southern portions of the Peninsula, but it may be said to be generally that of the warm countries. Although agriculture is very much neglected, and it is the only part of Europe where entire districts are left waste, this fertile country, nevertheless, produces abundance of *wheat*, *barley*, and *maize*; many wines, the most celebrated of which are those of *Porto*, at the west, *Xeres* and *Malaga* at the south, and *Alicant* at the south-east; and considerable quantities of fruit, such as *almonds*, *figs*, *raisins*, *lemons*, and especially *oranges*, the most renowned of which are those of Lisbon, at the west, and Valence at the east.

The *olive tree* is one of the most precious vegetables to the inhabitants of the peninsula, who eat its fruits, and in the seasoning of their dishes almost exclusively employ the olive oil instead of butter. This is a round and tufted tree, of medium size, whose whitish foliage imparts a monotonous hue to the landscape. It flourishes in stony soils much exposed to the sun, especially on the sides of hills. The whole importance of the olive tree consists in its fruit, a little larger than an acorn, and composed of a fleshy substance enclosing a solid and oblong kernel. The olive is preserved while it is still green, after its bitter qualities have been removed by subjection, during two or three hours, to the

action of a strong lye; it is then left several days in fresh water, and afterwards slightly salted, in order to preserve it until required for the table. But this fruit is chiefly valuable for the oil which it furnishes, and whose place can be supplied by no other. This oil is extracted from the flesh of the olive by compression.



Olive Tree.

That which is first obtained, without the addition of boiling water, is called *virgin oil*; the common oil is the result of more vigorous pressure. This tree is unable to support the cold; it usually blossoms in May; the olives are ripe in November; they are

then beaten down with poles, for otherwise they would remain on the tree until spring.

Other interesting vegetables, which are not peculiar to Spain, but are there found in greater abundance than elsewhere, are different varieties of *evergreen oaks*, each of which has its use. The species known under the name of *ornamental oaks*, for example, produce *sweet acorns*, which are eaten raw, roasted in the embers, or boiled like chestnuts. They are offered as a treat to strangers, who are at first astonished at such a novel entertainment, but soon become accustomed to it. These acorns resemble the hazel nut in taste; when cooked they are even more delicate. Another more valuable species of evergreen oak is the *cork tree*, whose thick and elastic bark becomes detached every ten years, after the tree has attained its twentieth year, if care is not previously taken to strip it. This oak, which grows very slowly, averages 30 feet in height, is unable to resist moisture and severe cold, and furnishes a hard wood, inferior, however, to that of our oaks. The bark is removed in the months of July and August. A tree 40 years of age has acquired a positive commercial value, and may yield 100 pounds of raw cork at every barking. As soon as it has been thus stripped, it secretes a glutinous sap, which thickens by degrees, and in the course of 8 or 10 years forms a new bark. Cork serves a great number of useful purposes; it is employed for buoying up the nets of fishermen, for the manufacture of corks for all kinds of vessels, for sustaining young and inexperienced swimmers, and finally, reduced to charcoal, it furnishes the *Spanish black*, of which painters make use. Another species, the *oak of the kermes*, which, in stony and sterile places, forms great thickets 4 or 5 feet high, nourishes a violet-colored insect of the size of a pea, somewhat similar to the cochineal. This *kermes* yields a superb scarlet color, more beautiful even than that which is obtained from the cochineal; but the latter is more abundant, and more easily procured than the kermes.

Two other useful plants are found chiefly in Spain, in the vicinity of the salt mines, or on the borders of the sea. The *esparto*, or *Spanish reed*, flourishes especially on the shores of the Mediterranean. Of it are made shoes, baskets, &c., which are usually termed articles of *esparto work*. It is principally

used in the manufacture of mats and straw matting, or common carpeting, usually dyed green, in imitation of turf. This is placed underneath dining tables and bureaus, and on the floors of carriages. Many well-ropes are also made of esparto, because this substance has the property of resisting the action of water longer than the hemp cordage.

These same maritime countries produce a considerable quantity of *salsola* (or soda) and other plants of the same nature, whose ashes, carefully collected, furnish the soda which is an article of commerce, and which is used in the manufacture of soap, in the bleaching of linen, and in glass ware. It is of the soda called *barilla* that the finest plate glass and mirrors are manufactured. The most esteemed is that which is exported from Spain, in baskets of esparto, and which is known under the name of *Alicant soda*. Since means have been discovered of extracting this substance from salt water, the commerce of the common soda has lost much of its importance.

The *animals* of the Peninsula present no remarkable points of interest. Horned cattle are not as abundant there as in the countries of the north, and the use of them is only imperfectly understood; insomuch that a great part of the butter consumed in these countries is obtained from Holland. The *horses*, especially those of Andalusia, (province at the south of Spain,) are celebrated for the beauty of their forms, and for their spirit. In the mountainous districts, *mules* are preferred for ordinary use, on account of their sureness of foot. As the roads are generally very poor and unsafe, the transportation of merchandise is most frequently conducted on the backs of mules, and muleteers usually contrive to travel in company, forming complete *caravans*.

All of my readers have heard of the *merinos*, those famous Spanish sheep, originally from Africa, which have served to improve almost all the races of sheep in Europe, but which have now lost much of their ancient reputation. These sheep are never confined in folds; in summer they are kept in the mountains, and during the winter are driven into the plains, where an immense extent of the most valuable land is reserved for their use. These flocks belong, for the most part, to the nobles of Spain, or to members of the high clergy, who compose, under the

name of *mesta*, an association which has for centuries enjoyed privileges of a truly despotic nature. The *mesta*, although not authorized to traverse cultivated lands, elude the prohibition, and the passage of these flocks, which usually number 10,000 sheep, is a species of imposition greatly dreaded by the people. The Peninsula formerly produced an immense number of *goats*, and supplied commerce with the *kid skins* so much in demand for the manufacture of gloves. Even now no country furnishes better skins, but the number of goats is beginning to diminish considerably; the progress of agriculture must gradually banish from the country this animal, which is the natural enemy of cultivation and plantations.

From Spain, also, are principally obtained the *cantharides*, a species of glittering flies of a very beautiful green color, blended



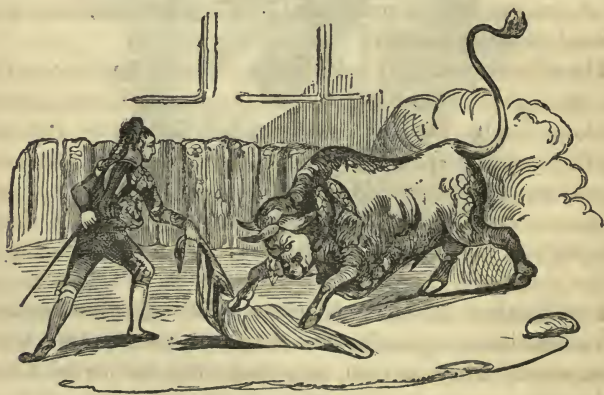
Cantharis.

with gold, and of a disagreeable odor. These flies are frequently used in medicine, especially for acting upon the skin as a blister. They usually collect on ash trees, and when, by the odor which they exhale, a swarm of them has been discovered, cloths are spread at the foot of the tree, and the branches shaken at early dawn, when the insects, benumbed by the cold of night, cannot fly. The cloths are then removed and plunged into a bucket of

vinegar, diluted with water. This immersion kills the insects; and they then only require to be dried in a well-aired shed, the precaution being taken to touch them only with gloved hands. They are afterwards preserved from dampness in jars hermetically sealed.

On the eastern coast, moreover, and in Portugal, *silk worms* are raised, whose products are very highly prized; in the hottest countries of the south, the *cochineal* is reared on the cactus, which grows wild in all the rocky soils, and on the road sides. It is affirmed that *monkeys* (undoubtedly escaped from Africa) exist on the mountain which overlooks the Strait of Gibraltar; this is the only point in Europe where they are to be met with living at liberty.

The *population* of the Peninsula is distinguished by characteristics peculiarly its own. The Spaniards are generally of medium size, their complexions pale, or very much bronzed by the heat of the sun, and their eyes and hair black. They have a grave, cold, silent, and apathetic exterior; but if any thing occurs to rouse these naturally passionate souls, they immediately abandon themselves to an all-absorbing activity, or to the most violent excesses. They eagerly court exciting emotions, bull



Bull Fight.

fight, or the execution of criminals, in default of the *auto-da-fe*, or punishments of heretics, Protestants or Jews, whom modern

civilization no longer suffers them to burn, as was the practice in these countries during many centuries. All the inhabitants of the Peninsula are Catholics, and tolerate no other religion. They are extremely superstitious and fanatical, and their religion consists in little but external ceremonies. Nowhere in Europe is instruction more neglected, and nowhere are so many beggars encountered. The Spanish beggar, it is true, arrayed in his ragged cloak, presents beneath his tatters an air of natural dignity, which somewhat relieves his abject appearance; but the filth and miserable aspect of the poorer classes in this country render them, nevertheless, painful objects to behold. Agriculture, manufactures, and commerce enjoy little prosperity, and bands of robbers almost always infest the highways. The Portuguese are only distinguished from the Spaniards by more indolent and corrupt habits, less loyalty, frankness, and dignity.

ITALY. — *Italy*, that peninsula which stretches between the Western Mediterranean and the Ionian and Adriatic Seas, is composed of two principal divisions; at the north, a vast low plain, of which we shall speak hereafter, and farther south the peninsula, properly so called, to which we shall now devote our attention; a country alternately smiling and wild, cut by detached chains of the Apennines into a multitude of valleys and maritime plains, isolated one from another.

The *climate*, generally very mild and warm, invites to a life in the open air, and the dwellings of the peasants, small, without windows, and destitute of order, betoken that under this sunny sky they scarcely enter their houses except to sleep. Sometimes a pestilential wind from Africa, the *sirocco*, parches the surface of the fields, and enfeebles the frame both of men and animals. The *bad air*, (*malaria aria cattiva*,) or *feverish air*, desolates most of the small maritime plains, principally on the western coast. Independently of those naturally marshy, like the *Maremma* at the north-west, and the *Pontine Marshes* in the middle of the western coast, which have preserved, notwithstanding the partial drought, such an insalubrity that travellers are recommended not to sleep while traversing them, there are countries which, like the *Campagna di Roma*, (or ancient Latium,) although formerly occupied by towns and a numerous population, have become uninhab-

itable during the summer on account of the bad air, which now penetrates even into the lowest quarters of Rome. The malaria only began to make itself felt in the third or fourth century after Christ, and it seldom rises more than 100 or 120 feet above the plain. It compels the proprietors or farmers to reside habitually on the heights, whence they descend only three times a year, to plough, cut the grass, and to reap their harvest — labors which are speedily accomplished by the aid of workmen whom the thirst of gain entices from the mountains at a greater or less distance. These laborers, amounting in number to 20,000 or 30,000, ill sheltered from the cold of the nights beneath miserable sheds, are frequently attacked by terrible fevers, and every day a large number are obliged to be removed to the hospitals situated on the heights. During the remainder of the year the farms are only occupied by the number of persons absolutely indispensable in the care of the crops and cattle. These unfortunate men, of a ghastly and feverish complexion, are truly melancholy objects.

Minerals. — The mineral riches of Italy consist rather in stony than in metallic substances — marbles, alabasters, lapis lazuli, porphyry, chalcedonies, lavas, &c. Moreover, no country is so distinguished in the art of incrustation and *mosaic work*, that is, in the representation of all kinds of flowers, animals, and landscapes, by the use of small stones of different colors, whose artistic combination forms a picture which resembles painting. We shall refer to them in connection with the Apennine Mountains.

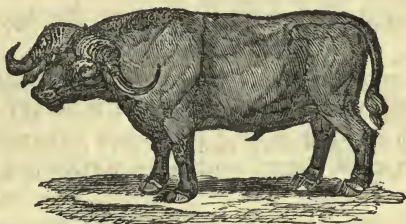
Vegetables. — Although there are desert spots, especially towards the southern extremity, it may be generally asserted that the vegetation of Italy is magnificent and extremely diversified. It is a characteristic feature of these countries that the soil produces a more abundant crop of grain and grass when it is protected by trees from the burning rays of the summer sun. Thus almost every where vast fields of wheat may be seen undulating beneath the shade of thousands of olive, elm, or poplar trees, to the very top of which climb vigorous vines, which produce an abundance of wine of medium quality. Elsewhere the pine of the warm countries (the *pin pignon*) extends its overshadowing boughs without depriving the vine of the sun, which it requires.

At the same time this tree yields, in the seed of its fruit, *sweet kernels*, which, eaten simultaneously, serve to enhance the flavor of wine, or which are used in the preparation of various dainties. Beneath the vine branches, that wave to and fro at the will of the winds, the land, after the harvesting of the wheat, produces a second crop of radishes and lupines, the former serving for the nourishment of men and cattle, and the lupines taking the place of artificial meadows or fat pasture.

The wheat, which is cultivated principally in Italy, is the stiff, *long-bearded wheat*, and is particularly in demand for the manufacture of the famous ITALIAN PASTES, *macaroni*, *vermicelli*, &c., of which the Italians are so fond. The farina of maize, of which they make the *pollenta*, a kind of porridge, very popular at the north of the peninsula, is also one of the principal sources of nourishment of the poorer classes.

The *mulberry plantations* are yearly multiplying; thus more than half of the silk annually produced in Europe is furnished by Italy. *Cotton*, of the herbaceous species, is cultivated in certain favored portions of the southern part, (kingdom of Naples.) *Orange* and *lemon trees* have always formed an important part of the agricultural industry of the country. There are likewise *fig trees*, whose fruit is exported to a distance.

The most remarkable animals of Italy are the *buffaloes*, which



Buffalo.

Providence seems to have constituted expressly for inhabiting the marshes of the western coast, and especially the Pontine Marshes. The buffalo is stronger, more thick-set in form, and larger than the ox, of a darker color, and has an entirely black head; it is dangerous to the man to whom it is not accus-

tomed, and will run at him. Its eye is fierce, and its hair rough, like that of the wild boar. It is fond of lying in the mud, and of spending the warm hours of the day immersed even to its neck in the canals. Its voice is a deep, powerful, and somewhat dismal bellow; its sight, which is poor, is more serviceable by night than by day. It may be termed the *rhinoceros of the temperate countries*. It is employed in ploughing and in towing boats; but in order to render it submissive under the yoke, it must be subjected to painful operations; thus, through its pierced nostrils is passed an iron ring, by which it may be seized when about to be attached to the plough; moreover, it is branded with a hot iron, that it may be recognized when mixed with the herds of another proprietor. The female yields an abundance of milk, which has a flavor of musk. In order to calm it during the process of milking, the peasant must chant in cadenced tones a strain to which the animal is accustomed. At night, when the herdsman wishes to drive the buffaloes out of the canals, he strikes the water with his staff and utters loud cries. At this signal the buffalo struggles heavily, and emerges from its retreat, completely covered with mire and marshy weeds. This animal, originally from the East Indies, was introduced into Europe in the sixteenth century by the Portuguese.

Cattle are not very abundant in Italy. Large and strong *oxen* are found there which perform all the labors, and *migratory* or *wandering sheep*, which, after having passed the winter in the plains of La Puglia, for example, at the south-east, reascend in summer the summits of the Apennines. These sheep, which live the whole year in the open air, and as it were at large, yield wool of only a middling quality, and are very injurious to agriculture. The *horses*, which are generally slight and active, are in no respect remarkable.

Among the noxious animals encountered in Italy should be mentioned the *scorpion*, an animal of the arachnoid, or araneous order, but which rather resembles the crab. Scorpions live chiefly in the warm countries; they creep on the earth, in low and cool places, and hide beneath the stones in uninhabited houses; when they run they erect their tails in a singular manner. They are armed with very strong pincers; but their most

formidable weapon is the curved dart which terminates their tail, through which flows a venom contained in an interior bladder. Their sting usually produces an acute inflammation, and even feverish symptoms, but is attended with no serious consequences ;



Scorpion.

these wounds may be healed by the use of volatile alkali applied to the spot, and administered internally. The sting of the scorpions of Africa is much more dangerous.

Another animal of the same species, and concerning which many fictitious stories have been related, is the spider, (known under the name of *lycosa* or *tarantula*, because it was first observed near the city and gulf of Taranto.) It is very large, and black, with the exception of the under part of its body, which is red ; its nest, dug in the earth, is constructed with great skill ; it lies in ambuscade at the entrance, whence it darts upon the insects which it perceives, and to which its sting is deadly. For a long time it was believed that the bite of the tarantula was poisonous, and produced the most extraordinary effects upon the men on whom it was inflicted : some, it was said, laughed, and others wept ; the former could not refrain from singing and dancing, whereas the latter were gloomy and silent ; all alike requiring the assistance of music to effect their cure. It is true that the venom of the tarantula is not unaccompanied by danger ; it causes swellings, giddiness, and nervous affections ; but the art of the physician can easily counteract its effects, and all that has been said relative to the employment of music, as a means of recovery, is only a fiction.

The *population*, although not of lofty stature, are generally vigorous and beautifully formed, especially in the mountains ;

thus it is generally from among the peasant men and women of the environs of Rome that painters prefer to select their models. The Italians are preëminently the artistic nation; passionately fond of painting, architecture, music, and poetry, they are peculiarly susceptible to the love of the beautiful. On the other hand, they are characterized by a decided tendency to idleness, love of pleasure, and great lightness of manners. Their Christianity, like that of the Spaniards, consists in little else than external forms; however, they are much less superstitious, fanatic, and intolerant; instruction is also much more widely diffused, although it bears no comparison with that which is enjoyed in the countries of the north. They are, almost without exception, Catholics, and the clergy are powerful and numerous; but their Catholicism is too often allied to actual infidelity.

The Italians are naturally sober, full of intelligence, vivacity, and courage. Unfortunately, the courage which they appreciate most highly is rather that which consists in braving danger than that which enables us to conquer our passions; hence that love for the bandit and brigand life which cannot be eradicated from the breast of this population. Robbery by open force, and even murder, are not regarded as crimes; in the popular opinion, the profession of the bandit is invested with grandeur, and indicates courage. Thus the brigand is habitually protected from the police. "O, poor man!" is the sympathizing exclamation of the crowd when one chances to be arrested. And at Naples the young girl often prefers to unite her fate to that of the fortunate brigand, rather than espouse the peaceable husbandman. "He is a brave man," she says; "with him I shall have silver, and costly attire;" but she entertains a sovereign contempt for the pickpocket or cunning thief; the wealth must be won at the price of danger. Sometimes the police are obliged to negotiate with the leaders of the bands, in order to set a limit to their depredations.

Italy and the two peninsulas which terminate it have often been compared to a boot, of which the *province of Otranto* represents the heel, and *Calabria* the foot. These two small peninsulas, although unimportant in themselves, have, however, an originality of their own, and merit some little attention.

1. The *country of Otranto*, destitute of springs and streams,

would be uninhabitable, were it not for its abundant dews, and its vast subterranean reservoirs of water. The air has become insalubrious in many places; in this country the greatest number of *tarantulas* are encountered.

2. *Calabria* is a very wild and mountainous country, celebrated for its terrible earthquakes, one of which, that of February 5, 1783, destroyed more than 300 towns and villages, and caused 40,000 individuals to perish, exclusive of 20,000 others, who were the victims of contagious maladies which succeeded the disaster. The climate is extremely hot; Calabria is exposed to the miasm of stagnant waters, and the blast of the sirocco, which, during the four months that it prevails, produces sickness, and parches the land. The vegetation is that of the very hot climes. The palm, cotton tree, and sugar cane there succeed to perfection; aloes cover the arid rocks; the mulberry tree nourishes many silk worms; the orange and lemon trees give rise to an abundant exportation of fruit into the countries of the north; and the olives produce oil in such quantities that it is preserved in cisterns. But the two vegetables which deserve particular mention, in connection with Calabria, are the manna tree and the licorice. The *manna* exudes naturally through pores in the bark of a species of ash; but usually longitudinal incisions are made in the upper part of the trunk, through which the juice escapes, which hardens, and becomes the medicine so well known under the name of manna. The *manna in tears*, which is the purest, is distinguished from the *sorted manna* and the *fat manna*, which are of inferior quality. This is a very mild cathartic, and it even appears that, in the countries where it is procured, the peasants employ no other sugar for their private wants. The various uses of the *licorice root* have already been detailed; the sap, after being boiled until it has acquired the consistency of sirup, is moulded, especially in Calabria, and in Spain, into those rolls of *licorice extract* with which all are familiar, and which are employed even in medicine.

The *population* is reputed idle, ignorant, superstitious, and vindictive. The Calabrians never travel unarmed, and their mountain bandits are particularly renowned for their invincible audacity.

THE TURCO GRECIAN PENINSULA, comprising Greece and Turkey in Europe, is situated between the Adriatic and Ionian Seas at the west, the Archipelago at the south-east, the Sea of Marmora and the Black Sea at the east. No other peninsula of Europe is indented by such a multitude of gulfs, or forms so large a number of small peninsulas, almost all inclining towards the south-east, as if to place Europe in easier communication with Asia, by the aid of the innumerable islands of the Archipelago.

The *aspect* of this country is extremely diversified. It is generally very mountainous; but in the midst of its mountains delightful valleys and fertile plains disclose themselves. At the north-east are found vast plains, of which we shall speak hereafter.

Climate.—This mountainous character of Turkey in Europe renders its temperature less hot than the latitude would at first seem to indicate. Towards the north of the country, the climate is almost cold, and the air often unhealthy, on account of the numerous marshes; at the south, on the contrary, it is generally mild and agreeable.

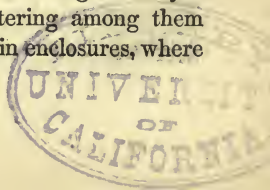
Minerals are not wanting; but they are scarcely explored, so great is the indifference of the Turkish government to this species of riches.

The *vegetation* is that of the countries of the south, and in certain places it is very fine. *Maize*, or *Indian corn*, is the most common cultivation of these countries, and is found alike in the plains and valleys; wheat prospers every where, except in places of too great elevation; oranges, pomegranates, figs, olives, and melons, abound generally towards the south. Many *roses* are cultivated for the manufacture of rose-water and oil of roses; they are planted in rows, and present a charming appearance in the flowering season, when these places are constantly perfumed by the flowers or the remains of the rose leaves. *Tobacco* succeeds perfectly, and is of superior quality. *Sesame* and *cotton* likewise flourish. The *Turkey cherry tree* is also cultivated, whose straight trunk and extremely smooth bark are used in the manufacture of very highly esteemed pipe tubes. Another product, which has acquired great importance since wood-engravings have become so general, is the *boxwood*, a shrub which

in Turkey attains eighteen or twenty feet in height, and whose hard and heavy wood has always been highly esteemed for articles turned in a lathe, and for the construction of toys. The fine and compact grain of this wood renders it invaluable for engraving. On a well-polished block the designer traces a subject with a pencil, the engraver then hollows all the edges of the surface which are left blank, so that the pencil characters stand out in relief, and the design may be put under press like a printing type. The leaves of the box tree are used instead of hops, for giving bitterness to beer; but this adulteration is dangerous.

The *oaks*, that abound in Turkey in Europe, furnish various products, which are highly appreciated in commerce, such as *gall nuts*, excrescences created on the oak leaves by the puncture of a little insect, and which enter into the composition of our inks and various dyes, and the *valonia* which is nothing more than the cup or envelope of the acorn of a certain variety of oak: these cups, which are usually of large growth, are esteemed for the tanning of leather and for dyeing black.

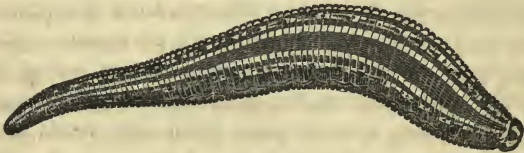
The *animals* are similar to those of the rest of Europe. The horses, generally of medium size, are well trained and of some repute. The *asses* are larger and stronger than those of Western Europe. *Sheep* are the companions of man throughout Turkey, and constitute the principal nourishment of its inhabitants. They have no stables; but in order to preserve them from the attacks of wolves, they are confined in palisaded enclosures. *Goats* are more numerous in this country than in all the rest of Europe, and contribute not a little to the devastation of the forests; they never enter a stable; some of them yield silky wool; thus they are reared for the sake of their hair and skin, as well as for their milk. *Swine* abound in the north-west, and especially in the immense oak forests of Servia. The Turkish hog, usually white, has large, crooked tusks, and often renders itself formidable to little children and dogs; it partakes somewhat of the savage nature of the wild boar. They wander by thousands, during the summer, in the oak forests, so that the proprietors themselves are not aware how many they possess. They are recognized by a notch commonly made in the ear. By scattering among them maize or barley, their owners entice them within enclosures, where



the whole band may be secured. They are fattened on acorns, chestnuts, apples, and wild pears, and give rise to a very extensive trade with Germany. It is this commerce especially which has furnished the Serbs with money and resources for maintaining against the Turks the almost complete independence which they enjoy. The destruction of the oaks is among them the ruin of men; thus they often sing, "May God give us an abundance of acorns, for every oak is a Serb."

Wandering dogs are one of the greatest peculiarities of Turkey and of the East. In the large cities especially exist considerable numbers formed into companies, which will not intermix with those of other bands. These troops of dogs, together with vultures and other birds of prey, perform the office of scavengers; they devour at least every thing that is eatable, and thus thoroughly purge the markets and streets. The baying of these animals during the night is very disagreeable to travellers, in the neighborhood of whom they invariably congregate and bark. They are not, however, to be feared when encountered, if one is only provided with a whip, or weapon of any other description.

A little animal, which gives rise in Turkey to a commerce still considerable, although gradually diminishing, is the *leech*, so valuable for extracting from certain diseased portions of the body



Leech.

the superfluous and injurious accumulation of blood. The leech is a species of worm, of a dark brown color, having at its two extremities lips, with which it clings to objects, and which aid it in its progress: in the interior of the upper lip are found three jaws, furnished with three small teeth, which serve to pierce the skin and start the blood, which the animal then sucks until gorged. The consumption of leeches has augmented extraordinarily within 30 years; thus they will soon be every where exhausted.

Paris alone employs annually more than three millions. They are collected in the marshes, both by the hand, and by means of small hair nets, with loose meshes. The individuals who engage in this fishery generally place their bare legs in the water, and seize all those which adhere to them. They carefully sort these animals, putting the sound ones into damp bags; but storms cause great numbers to perish during transportation.

The *population* is all of the white race. It is composed, 1. Of *Turks*, who are the masters of the country, although they are not the most numerous inhabitants. These disciples of the false prophet Mahomet are generally handsome and robust, of a grave aspect, very upright, hospitable, polite to strangers, good parents, and excellent friends, but oppressive and disdainful towards their Christian subjects, the *rayas*,—whom they habitually stigmatize by the epithet of *dogs*,—unrelenting in their vengeance, and always animated by strong religious fanaticism. The last sultans have accorded considerable privileges to the *rayas*; among others, a full religious liberty, absolutely unknown in Spain and Portugal: they have also made the greatest efforts to introduce into their provinces the civilization and arts of the west. The *Turks*, however, yield but slowly to these new influences, and have maintained up to the present time polygamy and slavery, two monstrous institutions, but authorized by the *Koran*.

2. Of *Slavonians*, established principally in the provinces of the north, nearly all of whom adhere to the Greek religion, except a few who are Catholics. They have suffered cruelly from Turkish tyranny, which has crushed and reduced them, without power to diminish their numbers, or quench entirely their thirst for independence. The country seems covered with ruins; for no one rebuilds his fallen house, for fear of exciting the cupidity of the *Turks* by an exterior of comfort. Their huts are often simply dug in the earth, on the sides of hills, with a hole in the ceiling instead of a chimney, which sometimes enables one from without to observe the private life of families. But it is impossible to judge of the prosperity of the peasants from the rude appearance of their dwellings. From these species of caverns, *Serbs* may often be seen to emerge, richly clad, armed to the teeth, with a proud air and uplifted head, each accompanied

by his wife, arrayed in as many jewels and ornaments of gold as would be required to constitute the dowry of her daughter. The stranger may every where fearlessly claim hospitality, as he can every where travel without apprehension of the least injury.

3. Of *Greeks*, who form the most numerous portion of the population, and chiefly inhabit the southern provinces. They are the most despised and ill treated of all the *rayas*, and are generally engaged in the cultivation of the land. Their religious chief is the Patriarch of Constantinople.

There exist also in Turkey communities of *Armenians*, who are principally occupied with banking business and commerce, a few Protestant churches, and a considerable number of Jews.

To the Hellenic peninsula, properly so called, belong several other peninsulas of minor importance, among which is one that has always been an extremely celebrated country, and of which it is necessary that we should say a few words: this is the *Morea*, (or ancient Peloponnesus,) bounded on the north by the Gulf of Lepanto, on the west by the Ionian Sea, on the south by the Mediterranean, and on the east by the Archipelago.

The Morea owes its name to the resemblance which it bears to a mulberry leaf. It forms a great number of small peninsulas, the most southern of which terminates in *Cape Matapan*, the extreme point of Europe in that direction. It is connected with the continent by the famous *Isthmus of Corinth*, which is very mountainous and easy of defence.

Aspect.—Greece is a perpetual succession of mountains and valleys, which have contributed in no slight degree in imparting to its people a character at once diverse and uniform. None of its mountains, however, attain the region of eternal snows.

The *climate* is generally very mild; the winters are often exempt from frost, and snow lingers but a few days in the plain; it rarely rains during the summer, so that a house is almost superfluous in this country during three quarters of the year. But nevertheless Greece is not a very healthy country; the marshy lands are insalubrious. Moreover, the imprudent clearing of the soil seems to have changed the climate. The same mountain in the forests of which the ancient Athenians formerly hunted the bear, now scarcely produces a few stunted trees. Many springs

and celebrated rivers have likewise disappeared, and with the drought, sterility has invaded lands which were formerly extremely fertile.

Vegetables.—The *olive tree* is nature's most precious gift to Greece. As many as nine varieties are found in this country, and it is estimated that an acre of olive trees yields a product a third more valuable than an equal quantity of land employed in any other culture. The aromatic plants with which the soil is covered impart to the *honey* of this region qualities which have rendered it famous, particularly that of Mount. Hymettus, in Attica; sweeter and of more exquisite perfume than any other known honey, it is at the same time of a most beautiful transparency, although of a reddish color. The Morea exports, in great quantities, to the west, its celebrated raisins without stones, improperly called *Corinth raisins*, since they are not cultivated in the environs of this city and isthmus. These raisins are very small; they change to a reddish black on becoming old, and are then sweet to the taste, although slightly acidulated. They are plucked from the stems, and when quite dry are exported in casks; great use is made of them in pastry.

The *animals* are of little note. Cattle are not abundant. The principal flocks are those of sheep, which are guarded by extremely savage dogs, dangerous to travellers. *Land tortoises*, of the species called *Greek tortoise*, exist in abundance in the Morea and in Turkey. They lay a great quantity of eggs, which are found on the ground in the places which they inhabit, and where the sun hatches them. They are eaten, as likewise the flesh of these animals, which bears some resemblance to that of chicken.

Population.—The Greeks are intelligent, lively, and courageous; but they are characterized by a great propensity for robbery and piracy, which are by no means regarded in this country as disgraceful deeds; the exploits of the most valiant of these brigands form, indeed, the principal theme of the popular ballads of modern Greece. Until the present era, however, it was against their oppressors, the Turks, that the enterprises of the brigands were directed. The Greeks are reputed a frivolous, unsteady, and superstitious nation. Nowhere, perhaps, are such a vast

number of lents and fast days observed. It is affirmed that of the 365 days of the year, as many as 182 are days of privation, during which eggs even are only allowed on Sunday. In this ancient country of letters, sciences, and arts, education is now but little diffused, agriculture neglected, and the arts extinct. Nearly all the inhabitants belong to the Greek church.



Greek.

PENINSULA OF CRIMEA.—The Crimea, situated between the Black Sea and the Sea of Azof, is united with the continent by a very narrow isthmus, that of *Perekop*. Its aspect is extremely diversified, for at the north it presents plains, forming an uninhabited steppe, destitute of trees and water, whilst the southern part is occupied by the high mountains of *Jaila*, which seem to be a fragment separated from the Caucasus by the Strait of Yenikale. The climate also naturally varies much; the plains of the north, exposed to the powerful blast of the icy north winds of the poles, are cold the greater part of the year, and intensely hot in summer; the southern coast, on the contrary, well sheltered by the mountains of the centre, possesses a temperature similar to that of Italy. The valleys of the *Jaila* enjoy a healthy atmosphere, a clear sky, and fruitful nature; in comparison with the rest of Russia, they are delightful regions, where the great Russian noblemen maintain charming country seats and smiling gardens. The *vegetables* are those of the warm climes; the

orchards abound in melons, pomegranates, and other fruits; the vine, the cultivation of which is greatly increasing every year, yields wines of some estimation. It is said that rye also grows spontaneously in this country, and in the neighboring countries of the Caucasus. The *animals* are numerous; the cattle are of good breed; camels are found there, and likewise long-haired goats, called *angora*. Among the birds, the most lucrative object of pursuit is the *bustard*, a large bird which commonly moves in



Bustard.

flocks of twelve or fifteen, and in winter of from eighty to a hundred. If frightened, each flies in a different direction. In

summer they are often seen feeding with their young, the male guarding the safety of his family, and giving the alarm at the least sign of danger: its vigilance is such, that much skill is required to enable one to approach it, by creeping, in order to kill it. They are better qualified to run than fly, and it is only with difficulty that they can be overtaken by dogs. But in winter, when the ice adheres to their wings, they cannot escape, and men mounted on horseback kill them with blows of their whips. Individuals are cited who have slain as many as a hundred and fifty in a single morning, and have thus earned more than \$90.

The *population* is composed chiefly of *Tartars*, a peaceable, industrious, and quite civilized people, although Mahometans. The other inhabitants are Russians, Greeks, and a few foreign colonists.

SECT. 3. PRINCIPAL CHAINS OF MOUNTAINS IN EUROPE. THE ALPS.—The *Alps* are the most important and the most beautiful of the mountains in Europe, as they are likewise the centre of all the European high country. They extend like an immense crescent from the borders of the Gulf of Lyons even to the mouth of the Adriatic Sea, every where elevating towards the skies their lofty spires or snowy peaks, here towering like an insurmountable wall, and there unbosoming broad and deep valleys, perfectly accessible and inhabitable, even to very great heights.

Nothing can be more varied than the aspect of the Alps. On the slopes and less elevated summits, the admiration is awakened by magnificent forests of beeches, firs, or larches, an important resource to the inhabitants. Higher up may be encountered the richest and most beautiful pastures, where graze superb cattle, whose milk is used in the manufacture of celebrated cheeses. Beyond the region of the charming rhododendron, or oleander of the Alps, and the pastures, one arrives at that of the *eternal snows*, which, gradually swollen by the water they absorb, and rendered heavy by congealing, glide downwards, descending into the high valleys, where they are transformed into those enormous masses of ice known under the name of *glaciers*. These, partially dissolving beneath the action of the summer heat, nourish the rivers and preserve the neighboring countries from drought.

A thousand singular caprices of nature also add to the astonishment of the traveller: here immense precipices, down which the eye glances bewildered, there smiling valleys, always enlivened by the murmuring of limpid streams, or by the curious spectacle of roaring cascades, falling like a network of white spray from the tops of the rocks. Elsewhere one finds himself face to face with some detached mountain mass, which has suddenly metamorphosed a smiling country into terrible chaos, where men, cattle, and houses are promiscuously buried. Again may be seen, gliding and plunging, the fearful avalanche, which, at first a small snow ball severed from the heights by some fortuitous event, sometimes by the simple concussion produced in the air by the human voice, increases so rapidly in its progress, that before arriving at the foot of the valley it often acquires colossal dimensions—overwhelming villages, uprooting entire forests, and even killing men and animals, merely by the whirlwind which it creates at some distance by its motion. Thus, every where in the Alps, creation is invested with a character of grandeur, of mysterious and terrible power, or of calm and silent majesty, which fills man with a sense of his own insignificance, and yet irresistibly lifts his soul on high, in the contemplation of the infinite glory of nature and of God.

The inhabitants of the Alps are swayed by the severe scenery which surrounds them on every side; but there is nothing painful or oppressive in the power which it exercises over them: on the contrary it develops their courage, their ingenuity, and their activity; it inspires them with such a love of their country that they quit it for a season only with regret; and if in a foreign land their ears chance to be greeted by the airs, whose strains have been repeated by the echoes of their own mountains, they pine with homesickness. They are generally robust and courageous, simple, generous, frank, and hospitable; they are very fond of the song, the dance, and the wrestling match. They are principally shepherds, and their life is half nomadic. At the close of the winter they abandon the valleys or the plains, and successively conduct their flocks in the spring, summer, and autumn to the pastures, situated at different heights, each of which has its appropriate cottage. The manufacture of cheese is almost

their only occupation ; wood, medicinal plants, cattle, and cheese are the articles which they export to foreign countries.

This picture represents, however, only the finest and most important portion of the chain, the *Central Alps*, or Alps of Switzerland and Tyrol, which naturally lead us to speak of the subdivisions and principal summits of these celebrated mountains.

The *Western Alps* are the least beautiful portion of the whole chain. They are, unfortunately, for the most part, destitute of wood, and consequently very poor. The forests having been once felled, the mosses and other small plants, which retained the vegetable earth, have dried up, and the rains and torrents have washed away what little earth covered the rocks, thenceforth left bare ; thus sterility has increased from year to year in a deplorable manner, and energetic measures would be required for the restoration of the forests. Such as they are, however, these mountains present, in their high valleys, rich and valuable pastures for the strolling sheep of the neighboring plains, (Provence,) which ascend them in considerable numbers during the heat of summer.

Certain remarkable animals are found there, such as the *great eagle of the Alps*, the king of birds, whose courage and generosity have generally been exaggerated in juvenile books ; the *brown bear* of the Alps, the most formidable of the wild beasts of Europe, which can, it is said, fell with one blow of its paw an ox or horse, but which often hugs and stifles its prey, tears it in pieces with its claws, and afterwards buries the remnants for a future meal. An animal, much more deserving of interest, and which abounds principally at the north-west, in the Alps of Savoy, is the *marmot*, which poor children carry into the large cities for the purpose of obtaining a few pennies from the compassionate bystanders, by making the timid animal dance to the music of the *hurdygurdy* or some such simple instrument. The marmot is of the size of a hare, but has a more thick-set body ; its hair is of a reddish brown, of a hue more or less deep. Taken young, it is easily tamed, and may be taught to dance, to seize a stick, to walk on its hind feet, and carry to its mouth the food which it grasps with its fore feet. Marmots live in companies, in subter-

ranean habitations, in the form of a prostrate Y (Y), the lower branch serving only as an outlet for rubbish, for this animal is excessively neat. These habitations are lined with a great quantity



Great Eagle of the Alps.

of moss and hay ; but the story related in many books, to the effect that this hay is transported by one of them stretched on its back and dragged by the others, is utterly preposterous. In the month of October they close up their dwelling with moss and hay, crouch close together, and there remain torpid and motionless until the month of March. They inhabit only the highest portions of the Alps, and as they never feed without stationing on some lofty rock a sentinel, whose shrill whistle warns them of the approach of an enemy, it is very difficult to catch and kill them. The flesh of the marmot is eaten, although it has a very strong flavor of wild game. Use is also made of its fur and fat.

The *Central Alps*, which, from the extremity of the preceding, stretch towards the east, include the highest summits of Eu-

rope — those which are visited almost every year by throngs of travellers ; among others, Mont Blanc, 15,739 feet high, whose difficult ascent has been attempted every summer since the celebrated Genevese naturalist De Saussure was enabled to measure and describe its perils, by having himself attained this icy peak, whence one enjoys a most extensive view, but where the azure of heaven seems almost black, whilst the atmosphere is such as to render respiration difficult, and blood often gushes from the eyes or nostrils. Mounts *Cervin*, *Rosa*, *Combin*, and *Bernina*, are also very lofty peaks.

These mountains also present secondary chains, forming a certain number of very large valleys, remarkable for their picturesque characters, their beautiful rivers, forests, and superb pastures, most of which terminate at their lower extremity in great lakes, where the rivers deposit their slime, and from which they issue clear and transparent. The most celebrated of these valleys are those of *Chamouni*, at the foot of the glaciers of Mont Blanc ; the *Valais*, at the foot of Cervin and Mont Rosa, between the principal chain of the Alps and the Bernese Alps ; the *Bernese Oberland*, or valley of Aar, a charming group of mountains and valleys, at the foot of the *Jungfrau*, (or Virgin peak,) in the Bernese Alps ; the valley of *Tessin*, at the south, and that of *Keuss*, north of Mount St. Gothard ; besides many others.

This portion of the Alps is generally well wooded : the forests are stocked with beeches, firs, often of gigantic size, and *larches*, whose wood is particularly adapted for vessels, or constructions exposed to the action of water. Much of these woods is exported to foreign countries. Of the maple wood, the peasants of the Alps, especially those of Oberland, carve thousands of little articles — spoons, forks, drinking cups, paper knives, small Swiss cottages, &c. ; and these works of sculpture, executed with admirable art, merely by the aid of a knife, are now disseminated every where among people of taste, and are the source of considerable profit.

The Central Alps contain few metals, but they abound in springs of mineral water, very beneficial to the health, and which attract many travellers. They are also rich in cattle, particularly in horned cattle of great size, producing famous cheeses, especially

those of Gruyères, which are despatched throughout the west. These mountains nourish various wild animals worthy of mention. Besides those which we have already designated in the Western Alps, — bears, eagles, and marmots, — we should particularize the



Chamois.

chamois — a charming animal now become rare, and the only one which Western Europe presents us of the antelope race. Its graceful head is adorned with small horns bent backwards in the form of hooks. This quadruped lives in troops on the high mountains, and displays the most wonderful agility. It is seen to leap precipices, skip from rock to rock, and pause on the edge of a peak, offering scarcely sufficient space for its feet. Its senses are very acute; it both hears and sees at a great distance: in case of alarm it makes the mountains ring with a piercing whistle, produced through its nostrils. It subsists on flowers, tender buds, and the most aromatic herbs. The chamois hunt is very toilsome and dangerous; sometimes, indeed, the animal, finding no other mode of escape, throws itself violently upon the hunter in order to precipitate him into the abyss. And yet an almost irresistible attraction always lures the sportsman to the highest peaks, where he can devote himself to this perilous pursuit. The flesh

of the chamois is excellent, and its very supple skin was formerly much esteemed for gloves, and even for garments.

The *condor*, *griffon*, or *Alpine vulture*, is the inveterate enemy of the chamois, which it pursues, attacks, and endeavors, by violent blows of its wings, to cast to the bottom of the abysses, where it becomes its prey. This terrible bird, which holds the intermediate position between the vulture and the eagle, measures as many as 12 and even 16 feet from one extremity to the other of its outstretched wings. It not only attacks sheep, chamois, goats, and marmots, but also man himself, and especially little children. Many of the latter, left alone in the lofty pastures, have been transported by these vultures to their almost inaccessible eyries; some of them have, however, been recovered before the bird of prey had devoured them. Fortunately, these birds, which lay only two eggs, and live isolated, or rather in pairs, are not very numerous; otherwise they would have soon depopulated the mountains of all other animals.

The *Eastern Alps* are generally less elevated, less picturesque, and less known than the preceding. They slope towards the east, and divide into many chains, forming great valleys variously celebrated; at the north the *Tyrol*, a country eminently picturesque and interesting, but which belongs rather to the Central Alps; at the south the *Valtellina* and the *Valley of the Adige*, which, in climate and vegetation, are wholly Italian; at the east the valleys of the *Mur*, *Save*, and *Drave*, particularly rich in cattle and metals.

This portion of the Alps contains enormous quantities of *salt*, which sometimes presents itself in the form of *mineral salt*, that is, crystallized, and more or less mixed with stone, and sometimes in the form of salt springs, whose water, gradually evaporated in great salt-boilers, leaves a sediment of fine white salt. When this salt is mixed with stone, fragments of rock salt are removed from the mine and placed in vast reservoirs excavated in the mountain, which are filled with water in order to dissolve the salt, and thus detach it from the stone with which it is incrustated. This water thence descends to the salt works, where the salt is extracted by evaporation.

The *Styrian Alps* furnish great quantities of extremely cele-

brated *iron*, which competes with that of Sweden, and is especially valued in England for the manufacture of steel. But the most famous mine of these mountains is the *mercury* mine in Idria, which, next in importance to those of Almaden, in Spain, is the richest in Europe. This substance is found either mixed with sulphur, forming *cinnabar*, of a red color, which is used in painting, or, it is dispersed in small globules among the clay, whence it often escapes and flows on the ground. The ore, after being pulverized and purified, is placed in furnaces; the fire causes the mercury to evaporate, which settles in a liquid form on the sides of the neighboring compartments, whence it flows upon the floor. Mercury, which is also called *quicksilver*, on account of its extreme mobility, is of a dazzling whiteness, and has the appearance of molten lead. It supplies medicine with very energetic remedies; it is used for plating glass in the manufacture of barometers and thermometers, and for numerous other purposes. Unfortunately the workmen who explore or prepare it are exposed to the sad effects of mercurial emanations. After a time they become seized with nervous tremors; one by one they lose all their teeth, and after suffering excruciating pain in the bones and joints, end their sufferings by death. In the most unhealthy portions of the mines of Idria, the workmen labor only four hours a day, and in other portions eight.

A peculiarity of the Eastern Alps is the enormous number of caverns, tunnels, and subterranean passages which are there encountered. In a single chain of these mountains there are estimated to be no less than 1000 caverns, some of which, such as those of *Adelsberg* and *Madeleine*, form, over an extent of nearly two leagues in length, a labyrinth of immense halls, lobbies, and passages, all resplendent by torch light, with a thousand incrustations. In the subterranean ponds of these caverns has been discovered a singular animal, the *proteus*, which somewhat resembles a lizard, and can exist both above and below the surface of the water. Light is not essential to it, as, in the place of eyes, only two small specks are to be seen; but it appears to suffer when exposed to the sun's rays. It has four feet, with three claws to the fore and two to the hind ones; but they are too feeble to

seize any thing, or to support the animal's body ; its head is ornamented with a kind of cock's comb. It seems to subsist entirely on water.



Proteus.

In the midst of this strange nature is found the singular *Lake of Zirknitz*, on which, sometimes in the same year, the labors of the fisherman, the hunter, the husbandman, and the reaper are alternately pursued. At certain irregular periods, the waters suddenly disappear through forty different fissures, which are found in the bottom of its bed. The inhabitant of the borders then hastens to secure the fish that the waters have left behind, and to hunt the aquatic birds which there take up their abode. He afterwards sows the fertile slime abandoned by the waters, and often raises a crop in the very places where he had previously fished with the line. But sometimes the waters reappear unexpectedly, and annihilate the hopes of the husbandmen, who console themselves for their disappointment by the great quantity of fish which the waves have washed up from their subterranean caverns.

The Alps alone do not constitute Upper Europe ; they are encircled by a girdle of chains, variously celebrated, and of which we now propose to say a few words.

THE JURA. — These mountains, which are of too little eleva-

tion to be crowned with snow during the whole year, originate at the point where the Alps begin to incline towards the east. They extend from south-west to north-east, forming many parallel chains, between which intervene high, cold, and marshy valleys, abounding in turf; they often contain lakes or ponds, whose waters lose themselves in subterranean passages, and after being made available as mill streams, before becoming ingulfed in these tunnels, reappear in some lower valley in beautiful and limpid springs. Barley and oats are the only cereals which can ripen in these high valleys, whose resources consist only in active industry. In the western chains of the Jura, which are the least elevated, are found *iron mines* and very prolific *salt springs*. Much *asphaltum* is also explored there—a bitumen of which we have made previous mention in connection with the Dead Sea, and which is now extensively used for the flagging of streets and for covering terraces.

THE VOSGES.—These mountains, a little less elevated than the preceding, form a beautiful and verdant chain, remarkable for their rounded summits, called *ballons*, and which stretch from south to north, commencing near the extremity of the Jura. The Vosges, with their fine forests, their wooden houses imbosomed amid this rich verdure, and the transparent waters of the rivulets which flow on every side, have a certain air of resemblance to Switzerland. There are found excellent pastures, considerable numbers of cattle, many celebrated mineral springs, mines of rock salt, and likewise salt springs of some importance. The Vosges produce many *wild cherry trees*, from which cherry brandy is obtained. The cherries are crushed together with the greater part of the kernels, then left to ferment, and afterwards distilled. The wood of the cherry, moreover, is possessed of a compact grain, susceptible of receiving a fine polish, and of a reddish color, which, heightened by soaking from 24 to 36 hours in lime water, considerably resembles mahogany. Thus in France, where the latter wood is still expensive, that of the wild cherry is much employed in cabinet work for the manufacture of chairs and other articles of furniture.

THE COTE D'OR.—Through the plateau of Langres, which contains the richest iron mines of France, the southern portion of

the Vosges communicates with the much less elevated chain of the mountains of the *Cote d'Or*, where *iron* is also found, but which received its name from its rich vineyards, where are manufactured the celebrated *Burgundy wines*, famed throughout Europe.

THE CEVENNES.—Bearing different names, this same chain extends towards the south and south-west, under the general designation of *Cevennes*. These mountains are naturally poor and arid, but the labor and patience of man have imparted to them an artificial fertility; they are now especially rich in plantations of *mulberry trees*, whose leaves serve to nourish an immense quantity of silk worms. Nature has, however, supplied the inhabitants of these mountains with a ready-made bread in the *chestnuts*, of which the largest known, under the name of *Lyons chestnuts*, are the object of quite an extensive commerce.

THE MOUNTAINS OF AUVERGNE.—A branch detached from the Cevennes, on the western side, forms the *Mountains of Auvergne*, remarkable for their ancient but now extinct volcanoes, at the foot of which spread immense beds of lava and basalt, proving how terrible in these places must have been the power of the subterranean fires at a period of which history has preserved no memorial. The principal peaks of conical form, and known by the name of *puy*s, (*Puy-de-Dome*, *Cantal*, *Mont d'Or*, &c.,) are quite elevated, and covered with fine pastures, but poorly wooded. They nourish some cattle, among others *goats*, whose milk is used in the manufacture of enormous quantities of cheeses. Great numbers of the population, who are poor and ignorant, emigrate to Paris, and other great cities, to find employment as chimney sweepers, porters, coal carriers, &c.

THE MOUNTAINS OF LIMOUSIN.—With the mountains of Auvergne are connected those of *Limousin*, consisting of peaks of little elevation, and thinly wooded, but damp, cold, and of an unhealthy, rainy climate. Chestnuts are one of the principal alimentary resources of the people, who dry them in order to preserve them throughout the year, and with whom they almost take the place of bread. This country, as if to counterbalance its deficiencies, furnishes abundance of *kaolin*, that hard, but fine species of clay, of which the beautiful *Limoges porcelain* is

manufactured. The ignorant and credulous Limousins emigrate in vast numbers to great cities, where they are employed as builders, and especially as masons; they are renowned for their sobriety.

Having sufficiently acquainted ourselves with the mountainous region which compasses the Alps at the north-west, we will now pass to that which surrounds Upper Europe at the north-east.

THE BLACK FOREST.—North of the Jura, and opposite the Vosges, appears a chain parallel to the latter, which owes the name of *Black Forest* to its gloomy forests of magnificent fir trees, whose wood is floated down the rivers, and thus exported to a distance. The ingenious sculptors of the mountains of the Black Forest also make use of this beautiful white fir for manufacturing quantities of *toys* and *wooden clocks*, of which hundreds of thousands are constructed every year. These mountains contain mines of considerable importance, and produce a famous cherry brandy, superior even to that of the Vosges. The inhabitants, well educated, full of intelligence, and very industrious, also manufacture many excellent straw hats.

THE RAUKE ALP.—The Rauke Alp, a chain of little elevation, but very steep, and of a wild aspect, follows precisely the same course as the Jura, of which it seems to be the continuation. This is a poor and gloomy country, with meagre pasturage, slender crops, and but few villages. From these mountains are procured the best *lithograph stones*. These are sawed, and then polished, first with fine sand, and afterwards with a species of lava, called pumice stone. This polish must be such, that a person, on approaching the surface of the stone, may clearly distinguish the reflection of his features. This stone absorbs both water and oily substances; but especially the latter. The design is traced with a pencil or rich ink, and afterwards washed with water. The latter penetrates every part of the surface which is not protected by the design, but it does not affect the characters in ink. A cylindrical roller is then passed over the stone, loaded with printing ink, and the design receives this ink, which is of an oily nature, while, for the same reason, the water preserves the other parts of the stone intact. A sheet of paper is then placed over the plate, thus prepared; this is pressed, and by means of

the ink with which it is covered, the design is found reproduced on the sheet. This operation has only to be repeated as many times as is required, until the original design has lost its distinctness in consequence of excessive friction.

THE ERZ-GEBIRGE.—Still pursuing the same direction towards the north-east, we arrive at the *Erz-Gebirge*, which signifies *mountains of mines*, so called on account of the abundance of their mineral products, and of the peculiar skill with which they are explored. Precious stones are there found in larger quantities than in any other part of Europe, although inferior to those of the East; quartz, amethysts, quartz-blanc, agates; *kaolin*, whose excellent quality has long contributed to the superiority of the Saxony porcelain over all others in Europe; silver mines, the most productive of the continent, besides many other useful metallic substances; the *cobalt*, for example, which yields the *azure blue* employed in the coloring of artificial stones, and in painting on porcelain. It is also used for imparting a blue shade to starch, for clearing paper of its yellow tinge, and in the composition of the beautiful *thenard blue*. A very curious sympathetic ink is made of cobalt dissolved in aqua regia; the characters traced with this ink disappear on becoming cool, and are again rendered perceptible, and of a beautiful greenish blue color, when placed near the fire.

These mountains, with broad and flat crests, and vast forests of firs, beeches, and oaks, present in certain places extremely picturesque landscapes, especially in the portion which has been surnamed *Saxon Switzerland*. The inhabitants lead a hard and laborious life, but they are nevertheless gay and amiable, well informed, and industrious. They have succeeded so well in improving their races of sheep by intermixtures with the Spanish merinos, that the Saxon wool now ranks first in the world.

THE SUDETIC MOUNTAINS.—The *Sudetes*, or *Mountains of the Giants*, commence at the north-eastern extremity of the preceding, and extend in a south-easterly direction. They have received this name from their very lofty summits, separated by wild gorges and numerous torrents. Iron mines of excellent quality are worked there, and more especially those of *zinc*, with which these countries supply a great part of Europe. The zinc,

whose use is daily increasing, is a light metal, with which roofs are covered, and of which bathing tubs and a variety of utensils are made; also a gray-colored zinc, which under the name of *white zinc* begins to take the place of *white lead*, whose poisonous properties are so fatal to the unfortunate workmen who are obliged to prepare or make use of it. Zinc combined with copper produces *brass*, which, being less expensive than the pure copper, is devoted to many uses. The population of the Sudetes are industrious, peaceable, and rich; these mountains are very well peopled; among them are found numerous large villages, consisting of pretty houses, scattered along the numerous rivulets, whose waters are particularly favorable to the bleaching of linen cloth, which is manufactured in considerable quantities in all these countries, and in the neighboring valley of Silesia.

THE MORAVIAN MOUNTAINS.—The *Moravian Mountains*, which form the extremity of the Sudetes, extend from north-east to south-east, parallel to the Erz-Gebirge, are less a chain with crests and summits, than a broad ridge of earth, cultivated or wooded, and covered with hills.

THE BOHEMIAN FOREST.—The mountains of this name, parallel to the Sudetes, and which complete the mountainous enclosure of the country called Bohemia, have lofty, wild, and arid summits, bordered with wooded offsets, which contain considerable metallic riches, and where much game is to be met with; wild boars, deer, stags, roebucks, hares, &c. In these countries, as throughout Germany, the exclusive right of the chase being always assumed by the nobles, and the laws against poachers very severe, game is much better preserved than elsewhere. Thus, in a royal or imperial hunt, it is not uncommon for 1000 hares to be slain, if such is the game in quest, 40 or 50 stags, as many deer, and a score of wild boars, if the sportsmen are in pursuit of large game, or 500 pheasants and 1500 partridges, if the chase is that of the feathered tribe. The hare hunt, in particular, is a source of revenue to the proprietors or tenants of the chase. For this they select the winter, in order not to interfere with the reproduction of the game, and because at this season the fur is better, and the flesh may be more easily preserved, and transported to a distance. Thus at this season it is sold at lower

prices in certain cities (Vienna in Austria for example) than butcher's meat.

THE HARZ. — North-west of the Erz-Gebirge is found a celebrated range of mountains entirely isolated amidst vast plains; this is the *Harz*, with steep valleys, and sterile, cloudy, and cold summits, which the Germans, great lovers of the marvellous, have pronounced the rendezvous of sorcerers and evil spirits. On the highest peak, illustrated by legends and popular tales, the *Brocken*, there often occurs, at morning and evening, a physical phenomenon which has long inspired the inhabitant of the Harz with terror, and given birth to many absurd superstitions. If the spectator be placed between the sun and a cloud, he sometimes beholds his image reflected in this cloud as in a mirror, but magnified and distorted. This appearance has some analogy to the phenomenon of the mirage, to which we have already alluded. The Harz, moreover, presents many remarkable caverns, containing the fossil bones of animals undoubtedly destroyed by some sudden convulsion of our globe, and very different from those which now exist in these same regions — tigers, lions, &c. The Harz is celebrated for its mines, the principal of which are those of silver, iron, lead, and copper. The inhabitants are almost all miners; thus the country seems deserted, the whole population being immured in the bosom of the earth, or dwelling in the cities. These miners are renowned for their skill, their almost military organization, and their passion for music. They are poor, but contented, joyous, and endowed with a lively imagination.

THE CARPATHIAN MOUNTAINS. — East of the Mountains of the Giants commences a chain which should be ranked among the most considerable of Europe, on account of its extent and the height of its peaks: these are the *Carpathian Mountains*, which first take an easterly, then a southerly direction, and afterwards retrace their course, curving to the west and north. They contain the richest gold mines of Europe, and the product of their silver mines is almost equivalent to that of the mines of the Erz-Gebirge and of the Harz. This is the only country in Europe where the *opal* is found, a beautiful precious stone with rainbow or flame-colored reflections, which long enjoyed an immense repu-

tation, because it was believed that this noble stone lost all its brilliancy upon the least contact with a poisonous substance, and was thus useful in revealing its presence. Immense deposits of *mineral salt* accompany the Carpathians from one extremity to the other; they have been worked for centuries, and many of these mines are extremely curious, among others those of Wicliczka, which are very large, and in the heart of which many workmen are born and die, who only rarely ascend to the surface of the earth; a succession of halls excite the admiration of the visitor, and especially chapels, excavated in the rock salt, all the ornaments of which, — high altar, crucifix, and statues, — being carved in salt, produce a magic spectacle when illuminated for divine service.

Having surveyed the principal mountains, which, united, constitute Central Upper Europe, we shall now consider the chains detached from this centre, and which thread the great peninsulas of the continent.

THE SCANDINAVIAN MOUNTAINS. — This chain, which commences at Cape North, is at first of but little elevation; its summits, however, increase in proportion as we advance towards the south, where they divide into two branches — the *Kiolen* at the south-east, and the *Dovrefield* at the south-west. These mountains, which are gloomy, cloudy, and fissured, are chiefly remarkable for the extreme breadth of their crest, resembling a vast barren and desolate plain, marshy, and covered with lichens. Many glaciers are found there, and the limit of perpetual snows becomes gradually less elevated as we advance towards Cape North. The Scandinavian Mountains are flanked by a prodigious number of valleys, which towards the west often form *fjords*, or chasms, occupied by the sea as far as the foot of the chain, and on the east (in this respect similar to the Swiss valleys) are almost all terminated by lakes, and traversed by rivers, forming superb cataracts of many hundred feet in height. These mountains are clothed with immense forests of pines, firs, and birches. Within the bowels of the earth there are *silver mines*, which are not very productive; the best *iron* of Europe, almost all of which is monopolized by the English, who make use of it in the

manufacture of their superior steel ; and *copper*, a valuable metal, which combined with zinc furnishes *brass*, and united with tin constitutes *bronze*, which is harder and more tenacious than pure copper, and of which are manufactured bells, cannons, statues, &c. The copper, of a yellowish red, serves to harden gold and silver without perceptibly altering their color. Being extremely tenacious, it can be drawn out into very slender threads, and rolled into sheets thinner than paper. It is the most sonorous of metals.

THE PYRENEES. — These mountains, next to the Alps the most beautiful in Europe, extend between the two seas like a gigantic rampart. There are said to be 75 *passes*, of which 28 may be crossed on horseback, and 7 in wheeled carriages. In the Pyrenees are found very beautiful valleys, many rivers, thermal springs, renowned baths, and some mines of iron and cobalt. There may be encountered rare specimens of a kind of *wild goat*, of singular agility and strength, which inhabits the highest peaks, and attracts attention by its long, fluted horns, which curve to such a degree as even to reach its tail, when the animal erects its head and throws them backward. These mountains also produce vast numbers of *marmots*, and *chamois*, or *izards*, incessantly pursued by bears, which are in their turn the objects of a very dangerous chase, and when taken alive are sold to the exhibitors of wild beasts.

THE CANTABRIAN MOUNTAINS. — This chain is a continuation of that of the Pyrenees, but of much smaller dimensions. It is divided into the Mountains of Biscay at the east, Mountains of Asturias in the centre, and Mountains of Galicia at the west, presenting in almost every direction plateaus, barren, like steppes, which take the place of valleys on the sides of a great number of the mountains of the Peninsula. These mountains, formerly well wooded, have been in a great measure despoiled to aid the exploration of the rich mines of excellent *iron*, of which the famous *Toledo blades* were formerly made. Tolerably abundant mines of *pit coal* are now also made available.

THE IBERIAN MOUNTAINS. — From the midst of the Cantabrian Mountains proceeds, in a south-easterly direction, the

chain of the *Iberian Mountains*, which extend all along the eastern coasts of Spain, at a greater or less distance from the sea. At an ancient period silver mines were worked there for a considerable length of time, but abandoned since the discovery of the rich repositories of precious metals in America: however, efforts are now being made to resume their operations. Upon the highest summits may yet be seen the fleet *wild goat*, almost entirely disappeared from the Alps and Pyrenees, and the thick-set *muf-flon*, the wild and primitive type of our sheep. These animals are pursued by a species of *lynx* (the *loup cervier*,) a large wild cat, of a bright red with dark brown spots. Both agile and strong, the lynx climbs trees in order to chase the squirrels, or surprise the birds in their nests; or placing itself in ambuscade on a low branch, it darts thence upon a fawn or roebuck, leaps upon its neck, and there clings until it has strangled it; it then tears a hole in the back of its head, and sucks away its brains through this aperture. This terrible destroyer of game is remarkably neat, and its pretty coat furnishes a much esteemed fur.

SIERRA GUADARAMA. — From the Iberian Mountains issues, in a south-westerly direction, a chain whose name of *sierra* (which signifies *saw*) indicates its abrupt and bristling aspect; this is the *Sierra Guadarama*, which extends under different names as far as Cape Roca in Portugal, where it assumes that of *Sierra Estrella*. Its surface is generally bare and sterile; but various useful mineral substances are there explored, among others the *jet* or *pitch coal*, a species of fossil carbon, of a black color, which is easily ignited, but yields much less heat than pit coal. The jet is of a shining black, and susceptible of a beautiful polish; it is used in the manufacture of ornamental articles, such as buttons, eardrops, necklaces, and mourning ornaments generally.

SIERRA MORENA. — This chain, farther south, and parallel to the preceding, derives its name of *Black Mountain* (*Morena*) less from lofty forests, of which it is almost entirely destitute, than from the dense thickets of *arbutus*, and other shrubs of a sombre foliage, which carpet its sides. This chain, with rounded summits and desolate slopes, is one of the most celebrated resorts

of robbers that is to be found in Spain, and the traveller crosses it with fear and trembling. This country claims the first rank in Europe for the production of *mercury*, which has been explored at *Almaden'* (the mine) for nearly 20 centuries. The labor of these mines was formerly performed by convicts — mutinous gangs, difficult to control; it is now entirely accomplished by free laborers. Mercury is thence transported to Seville in leather bottles, discharged in the pits of the royal magazines, and afterwards poured into iron bottles, hermetically sealed by means of a screw cap. This chain extends as far as Cape St. Vincent, in Portugal, where it bears the name of *Mountains of Algarve*.

SIERRA NEVADA. — *Sierra Nevada*, (or snowy mountain,) the highest chain in Spain, is situated south of the preceding, and but a little distance from the sea shore. Nowhere, perhaps, does one remark so striking a contrast as between the eternal snows which crown the highest summits of the Nevada and the delightful valleys which are found at its base, where the sugar cane, pineapple, cactus, and banana adorn even the garden of the poor, so that the astonished traveller may in one day pass from a burning clime to icy peaks, and survey all the successive phases of vegetation, from the verdure of the tropics to the plants which flourish in frigid Lapland. These mountains contain the richest *lead* mines in Europe.

THE APENNINES. — This chain, which commences at the point where the French Alps slope towards the sea, proceeds first in an easterly direction, and afterwards descends to the extremity of Italy, extending its ramifications on every side. At the point where the Apennines diverge towards the south-east are found the famous quarries of *Carrara marble*, which, from ancient to modern times, have furnished for 20 centuries the finest materials for sculptors and architects. Below, in Tuscany, are found renowned *alabasters*, and lower yet, near Rome, important mines of *alum*, a species of salt, which is first calcined in the fire, and then dissolved in water in order to crystallize it. The pure alum, of a white color and an astringent taste, is employed in medicine; in the arts it is used principally for fixing most of the colors on fabrics, for imparting firmness to tallow, for preventing paper from blotting, and for preserving skins from the attacks of worms.

The Apennines are especially noted for *volcanoes* of all kinds — *volcanoes of mud*, at the north of the peninsula; *extinct volcanoes*, whose craters are generally occupied by lakes; and *solfataras*, or volcanoes in miniature, emitting, through crevices of greater or less breadth, vapors strongly impregnated with sulphur, which becomes deposited on the borders, and is collected for commerce. Near the city of Naples rises an active volcano, the celebrated *Vesuvius*, whose first eruption, in the year A. D. 79, ingulfed beneath torrents of lava the two cities of Pompeii and Herculaneum, which, after the lapse of many centuries, have been disinterred in an extraordinary state of preservation. This volcano is of little elevation, but it is the only one which now exists in motion on the continental portion of Europe. The border of the crater at the summit is about half a league in circumference; one can often descend into the bosom of this vast tunnel, whence vapors and smoke are continually rising. Long streams of lava cover the outer sides of the mountain; among the most recent effusions, the guides will sometimes indicate those which appear to be entirely cold, and yet a stick thrust into them may be drawn out lighted.

THE DINARIC ALPS. — This chain, a prolongation of the Eastern Alps, extends from north-west to south-east, along the coasts of the Adriatic Sea, to a certain point where it divides into two principal branches, to which we shall presently advert. These mountains, which are very steep and wild, are covered with forests of firs and oaks. The latter, as we have elsewhere remarked, nourish with their acorns great numbers of swine, especially in the eastern portion, — Servia, — whilst at the west, near the coast of Dalmatia, they furnish much *amadou*, or German tinder. This substance is obtained from certain mushrooms, which grow on the oaks; it is prepared by removing the upper part of the cap, which is hard and ligneous, and the lower layer, which is too soft, after which the substance is cut in slices, which are steeped in water to soften them, and afterwards beaten on a block with a wooden mallet in order to spread them; each sheet of amadou is dipped in saltpetre for the purpose of rendering it more inflammable.

These mountains produce considerable numbers of wild beasts,

such as *bears*, which the people of the country sometimes, it is said, capture by the aid of a cask of brandy, mixed with honey; as the animals, after imbibing this liquor, become intoxicated, and exhaust themselves by dancing. *Wolves*, which are very common, are strangled by means of iron traps set for them; they are, however, but little formidable, except to the sheepfolds. *Wild boars*, *stags*, and *roebucks* are quite rare.

THE BALKAN MOUNTAINS.—From the Dinaric Alps, and towards the east, the *Balkan* chain detaches itself, whose name signifies *difficult defile*, and which erects itself like a formidable rampart, traversed only by a small number of dangerous routes, almost impracticable for an army. Forests of beeches clothe its wild summits.

THE PINDUS.—The southern continuation of the Dinaric Alps is known under the name of *Mountains of Albania* and *Pindus*, now for the most part destitute of wood, but where much *boxwood* is still procured. *Olympus*, which by Greek mythology was entitled the throne of the gods, although not the highest summit of the Pindus, is one of the most beautiful. *Parnassus*, the cherished mountain of the poets, situated at the southern extremity of the chain, is still less elevated.

Thessaly, whither it is affirmed the first Greek navigators, the Argonauts, brought the *pheasant*, (originally from the borders of the Phase, at the foot of the Caucasus,) is still the favorite resort of these birds, of which the chain of the Pindus possesses such numerous flocks that they may be heard whispering on all sides at sunset. The *turtle dove*, at the approach of spring, cooes at the door of the Turkish peasant, who compassionately suspends a basket on the finest tree of his garden, accompanying the act with the exclamation, "Allah protect thee!" and there this gentle bird establishes its nest. In the following spring it conducts to the same places its mated progeny, and soon each tree has its basket and its new family. For guarding and defending their flocks the shepherds of the Epirus maintain excellent and vigorous dogs, which are descended from the famous *Molosses*, so celebrated in antiquity.

There is also found in Albania (ancient Epirus) a vast mine of *mineral pitch*, or *bitumen*, which is remarkably pure and abun-

dant. Here and there are crevices, through which escape gases that sometimes accidentally become inflamed, and burn several weeks in succession.

Many myths have been related by the ancients concerning these flames, which were said to overrun the country without damaging the verdure; among these wild mountains they also located the Styx, the river of hell.

SECT. 4. PLATEAUS OF EUROPE. — The plateaus of Europe are too few in number, and too inconsiderable to have ever acquired in the European continent the same degree of importance that they possess in Asia and Africa. They are six in number, and next claim our attention, although we shall not enter into particular details concerning them.

THE SWISS PLATEAU. — The *Swiss plateau*, which is estimated to be only 1800 feet in elevation, is situated between the Jura and the Alps, and bounded on the north-east by the Lake of Constance, of which we shall speak more particularly hereafter.

The *aspect* of the Swiss plateau is that of a very undulating plain, watered by multitudes of streams and rivers, and sprinkled with lakes, hills, fields, and forests. The country presents every where a fertile, flourishing, and well-cultivated appearance. The land is divided among numerous proprietors, but each peasant diligently cultivates his few fields, on the products of which only slight taxes are levied.

The *climate* is temperate, the air keen, but generally salubrious, except in the depths of a few valleys, where are found *cretins*, unfortunate idiots, with a stupid air and hideous *goitre*.

The *minerals* are iron, salt, a little lead and pit coal. A great number of renowned baths present attractions to travellers.

The *vegetables* are those of the temperate countries; the plateau produces wines, fruit, and grain. In the northern portion, especially, much wheat is sown, of the species called *spelt*; of this grain bread is made, and also *semoule*, a substance which is prepared by first separating in the mill the hulls and the bran, after which the wheat is bruised and reduced to very small, dry grains, or semoule, which constitutes an important article of food. The farina of another variety — starch spelt — furnishes a very

excellent starch. The spelt yields less abundant crops than the ordinary wheat, but it possesses the advantage of ripening more easily, in somewhat cold climates. Forests of oaks, beeches, and firs abound in Switzerland; the pastures are every where excellent, and nourish especially much large cattle. Immense orchards overshadow the villages and embellish the landscapes; in Thurgovia, near Lake Constance, they form a forest of many leagues in extent.

The *animals* are principally horses, oxen, and cows, of a strong race, and of the finest growth, giving rise to the manufacture of enormous quantities of butter and celebrated cheeses; the number of sheep and goats is comparatively inconsiderable; game and wild beasts have, in a great measure, disappeared with the progressive increase of the inhabitants.

The *population* naturally exhibit many points of resemblance to those of the Swiss Alps, of which we have previously spoken; but they have less originality and variety of manners. The majority of the inhabitants of the Swiss plateau are of the German race and tongue; those of the south-west, of Burgundian origin, speak French. All are remarkable for a lively and profound national sentiment and an ardent love of country. Proud of their heroic ancestors, and jealous of their republican independence, preserved during more than five centuries, in the heart of monarchical Europe, the Swiss have often displayed great courage, noble firmness, and an unwavering fidelity to their oath. But the diversity of religion (the greater part are Protestants) has often divided them, and established between the various cantons a perceptible difference in cultivation and social development.

PLATEAU OF BAVARIA.—The *plateau of Bavaria* is the continuation of the Swiss plateau. It is situated between the Alps, German Jura, and the Forest of Bohemia. It is the highest of Upper Europe, being on an average at least 2000 feet in elevation.

Its *aspect* is generally monotonous and gloomy. Fertile countries are met with, but the soil is usually unproductive; sometimes dry and arid, consisting of vast heaths, sometimes dotted with small lakes abounding in fish, or rendered marshy by the inunda-

tions of rivers. It is not undulated and smiling like the Swiss plateau.

Climate.—The air is also more keen and cold, and the climate more variable; the winters are long and severe; no mountains shelter the country from the cold and boisterous winds which descend from the Alps, so that the vine and many other no less delicate productions could not succeed there.

The *minerals*, *animals*, and *vegetables* offer nothing remarkable, or which differ from what are found throughout temperate Europe. *Hops* succeed better than fruit trees, and are used for the manufacture of beer, which has a wide reputation. The hop is an herbaceous and climbing plant, which is cultivated in all the central portions of Europe, on account of the small cones which constitute its fruit, and to which the beer owes its lively bitter taste and its characteristic flavor. Hops, in order to yield good and abundant products, require much care; a hop plantation may continue in a bearing condition from 15 to 20 years; the stalks are sustained by props, from 20 to 25 feet high, to which they are attached by rushes or wisps of straw. The stalks being cut, the cones are removed and dried; in the north, brick ovens are generally used for drying them, after which they are spread for three weeks in a well-aired room, and then packed in bags for exportation.

Population.—The Bavarians are gay and good natured, but of a cool temperament. They are averse to labor; their life, moreover, is said to be quite worldly, and their manners somewhat corrupt, even beyond the precincts of the large cities. Beer is their only beverage, and they have the reputation of being the greatest drinkers in Germany. The majority are Catholics, but their religion consists principally in ceremonies and superstitions.

PLATEAU OF BOHEMIA.—*Bohemia* is encircled by the four chains of which we have made previous mention—the Erz-Gebirge, the Mountains of the Giants, the Moravian Mountains, and the Forest of Bohemia.

Aspect.—This is a fertile and undulating country, intersected with hills and ravines, where nothing is more rare than a plain of any extent, or a high mountain. The plateau slopes towards the north, where it is warmer and more spring-like than at the

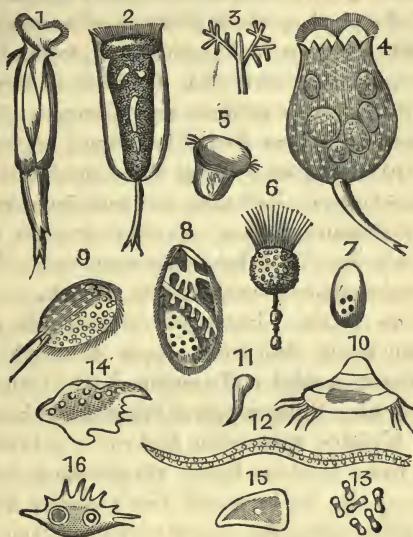
south ; it is said to include more than 20,000 ponds, generally very well stocked with fish.

Climate. — Owing to the mountains which encompass it, and which serve particularly to screen it from the cold north-east winds, Bohemia enjoys a climate sufficiently temperate to admit of the growth of the vine, which yields considerable products.

Minerals are the principal wealth of Bohemia. We have already named, in connection with the Erz-Gebirge, its rubies, garnets, topazes, and other precious stones, employed by the lapidary. It likewise contains *kaolin* and sands, which have imparted to its porcelain, as well as to its glass and crystals, a world-wide superiority. Its baths are numerous and of great celebrity. This country also furnishes *graphite*, improperly called *black lead* ; for this substance is composed of almost pure carbon, which is sawed into slender sticks, and afterwards encased in wood to form pencils. The mines of Bohemia yield also a little silver, much pit coal, iron, copper, lead, and tin, which metal, being easily melted and combined with others, is very valuable and useful. With copper it constitutes bronze and bell metal ; copper is plated with a thin layer of tin, in order to preserve it from rust, called *verdigris*, always dangerous if it becomes introduced into food ; mixed with mercury it is used for the plating of glass ; tin plate is made by overlaying iron plates with a coating of tin.

But of all these minerals, that which presents us with the most wonderful phenomena is the *tripoli*, a clayey substance of a reddish or rosy tint, and which, on account of its hard grain, is used, mixed with oil or sulphur, for polishing silver and other metals. The tripoli is found in many places, particularly at Bilin, in Bohemia, where it forms a bed of more than twelve feet in thickness, which extends over a considerable space ; elsewhere vast soils and even entire rocks are composed of it. This tripoli consists entirely of the shells of infusoria — animalcula so small, that it is estimated that at every friction, made with a quantity equivalent in bulk to the head of a pin, 20,000,000 of them are crushed. The duration of life in these animalcula varies from a few hours to several days. They have been examined through microscopes of great magnifying power, and it has

been ascertained that many are carnivorous, and subsist upon smaller species. Some remain motionless, apparently dead, enveloped in earth or dry sand during years; but strange to relate, if a drop of water is applied to them, they revive and commence



Specimens of Tripoli.

swimming with the same activity as before. And all these little beings have their use in nature; they maintain the purity of the air and water, by appropriating to themselves the particles produced by the decomposition of vegetables and animals; they serve in their turn for creatures of a superior order; under the name of *Finland farina*, or *mountain flour*, they are capable of assuaging the miseries of a famine in the countries of the north; the deposits which they leave at the bottom of the water may be used to fertilize the land. All this coincides with the language of the eloquent Scotch preacher *Chalmers*, who asserts that "every atom may contain in its bosom an animated and active life, and that if we could remove the mysterious veils which hide them from our eyes, we should be led to contemplate spectacles

no less marvellous than those of the firmament; the smallest point, scarcely recognizable by the aid of the microscope, being large enough to afford the Creator a new opportunity for displaying his omnipotence."

The *vegetables* and *animals* merit little comment. The animal kingdom includes much game, and among other species pheasants.

The *population* belong, for the most part, to the Slavonic race, that great human family which has occupied all the eastern part of Europe; the other inhabitants are Germans. The Slavonians of Bohemia style themselves *Tschekhes*, (the *first*, or *those in advance*.) Although greatly mixed with the Germans, they have preserved their language and their national manners. They are gay, lovers of pleasure, sensual, passionately fond of music, tolerably well informed, and less industrious than the Germans. The greater part adhere to the Catholic religion.

PLATEAU OF TRANSYLVANIA. — *Transylvania*, a plateau of little elevation, (about 1000 feet above the sea,) entirely surrounded by the Carpathian Mountains, with steep and difficult passes, forms a naturally fortified, military bulwark, against which the waves of invasion have often broken or divided. *Transylvania*, whose name signifies *beyond the forests*, is a mountainous and wooded country, of a somewhat harsh climate, and possessing scarcely any other riches than those which we have already indicated, in connection with its mountains — mines and gold washings, an abundance of mineral salt, certain precious stones, copper, and lead.

Of the *population*, which is composed of Hungarians, Germans, and Wallachians, we shall speak more particularly in treating of the low plains.

PLATEAU OF OLD CASTILE. — This *plateau*, situated between the Cantabrian and Iberian Mountain, and the chain of the Sierra Guadarama, is the most elevated in Europe; for it is about 2500 feet above the level of the sea.

Its *aspect* is that of immense, bare, dry, and dusty plains, where even the cultivated fields present a desolate appearance, and where the scanty villages, with their thatched roofs, assume, in consequence of the reddish dust with which the air is filled, a color so like the sun, that they cannot be distinguished at a slight

distance. This plain is occasionally fissured by broad and deep ravines, through which flow rivers, and where sheltered from the winds, the orchard trees flourish.

The *climate*, naturally dry, is tempered by its great elevation, and by the blast of the impetuous winds, which blow in every direction; no tree can resist the action of these violent tempests, creating the whirlwinds of fine dust to which we have already referred.

The *vegetation* is generally poor, except in the ravines. It consists only of heath and meagre pasturage for the wandering sheep; there are no trees, not even bushes, the Castilians being persuaded that trees attract the birds, which destroy the grain and fruits. In certain portions of the plateau, however, the soil is composed of a fine black mould, producing wheat and other grains in such abundance, that in favorable years the greater part is suffered to rot on the ground, for the want of good roads, and means of turning it to account; thus old Castile is capable of becoming the granary of Spain and the neighboring countries; this wheat is of excellent quality. Barley and the vine are also cultivated.

Animals.—Old Castile is not deficient in cattle; it abounds especially in cows, whose butter might be rendered profitable, if the inhabitants understood the art of salting it. But the principal wealth of these high plains is the *merino sheep*. The wool called *Lyonese* is always sold in the markets as wool of the first quality; that of *Segovia*, which formerly ranked first, has greatly depreciated, since, through negligence, the sheep have become infected with disease.

Population.—The inhabitants of this natural fortress are grave and serious, like their country. They possess, in the highest degree, the virtues and vices which characterize the Spaniards; thus, by their active bravery and perseverance, they have established their supremacy, and the Castilian tongue, throughout the Peninsula.

PLATEAU OF NEW CASTILE.—This plateau, situated south of the preceding, between the Sierra Guadarama and the Sierra Morena, is considerably less elevated than Old Castile, to which it has otherwise much resemblance.

Its *aspect* is less gloomy and desolate, but it is completely destitute of trees, except in the valleys and in the neighborhood of rivers.

The *climate* is warmer, but always exposed to cold and violent winds.

Vegetation.—The lands of New Castile would be capable of all kinds of productions if they were not parched by the heat of the sun, or if pains were taken to irrigate them, by means of the numerous rivers which traverse these plains. The dearth of wood is such, that in the greater part of the country, small shrubs, and certain grasses which are collected in the fields, constitute the only fuel for cooking and heating ovens. Wheat, a little barley, and wine, a tolerable quantity of olive oil, and important crops of *saffron*, are almost the only products. Many *sweet acorns* are also consumed there.

In its *animals* and *population* New Castile differs little from the Old. The wool of the merino sheep is, however, of inferior quality.

The most southern and richest portion of New Castile is *La Mancha*, a lower plain, separated from New Castile, properly so called, by the small chain of the *Toledo Mountains*. In this province are found the famous mercury mines of Almaden.

SECT. 5. PLAINS OF EUROPE.—PLAIN OF RUSSIA.—All the northern portion of Europe forms an immense low plain, which extends from the Black Sea to the Baltic and White Sea, and from the Ural Mountains to the Carpathian. This space is traversed by no mountain chain capable of intercepting the icy winds of the poles, and its uniformity is only relieved by two chains of hills, which, stretching from north-east to south-west, divide the whole country into three parts, to which may be added a fourth, — Poland, — situated farther west, and which possesses certain distinct characteristics.

Southern Russia.—This portion, situated north of the Black Sea, is especially characterized by its *steppes*, destitute of trees and bushes. These are immense and uninterrupted plains, carpeted in the spring and autumn with abundant grass, covered in winter with snow, which the wind blows and drifts, and obscured in summer by clouds of extremely fine dust, constantly

hovering above the soil. These plains, which terminate at the Black Sea in a perpendicular terrace, from 120 to 180 feet in height, are furrowed here and there by rivers and streams, flowing through steep and profound ravines, often impassable to shepherds and their flocks, and which in winter, when filled up with snow, present the greatest perils.

The *climate* is that of a country of steppes ; it varies from one extreme to the other ; only during a few days in spring and autumn do the steppes enjoy that medium temperature to which their geographical position would seem to entitle them. The winter is often as severe as on the borders of the Baltic Sea, and violent gusts of wind, which prevent the snow from acquiring any solidity, interpose obstacles to sledge travelling — that rapid means of communication so highly appreciated by the Russians. When the snow melts, the surface of the soil is transformed into an immense sheet of mud, almost impassable, and which alternately freezes and thaws during several weeks ; when the spring has actually arrived, the steppe is clothed with luxuriant vegetation, and the earth resembles a vast carpet of verdure, very monotonous however, and presenting no fine and velvety turf. In July the heat becomes excessive ; the dried earth cracks in a thousand places, and the grass turns yellow, as if scorched by fire. At this period thousands of horses and horned cattle perish ; it becomes necessary that the small number of springs which still furnish water should be guarded by sentinels. Men and cattle wear a languid and forlorn air. In September, the night dews recommence ; soon follow clouds and rain ; the plain is once more covered with grass, and men and animals are revived. Although the autumnal season is agreeable, it is only of short duration ; October, with its cold rains and fogs, is the herald of winter.

Vegetation. — Noxious plants, or *burian*, are one of the principal obstacles which the steppes oppose to cultivation. *Thistles*, for example, often attain even the dimensions of trees, and shelter beneath their branches the huts of the inhabitants ; in certain places they are so dense, that they form thickets, in the midst of which a Cossack, mounted on horseback, may conceal himself. The *bitter wormwood* sometimes rises six feet in height, and covers great spaces ; elsewhere grows in abundance the *witch of*

the wind, which, withered by the heat of summer, is borne on the whirlwinds, and afterwards, in its rapid flight, becoming entangled with other plants of the same species, the whole mass is finally precipitated into the Black Sea. The burian even gradually encroaches upon the pasturage, and the farmer at last sets it on fire, in order that a new crop of grass may immediately spring from its ashes. Often, in default of sufficient precautions, or in consequence of accidental circumstances, these fires extend over immense spaces, destroying plantations, flocks, and even entire villages.

Nature evidently designed the steppes of Russia for a pastoral and nomadic people, rather than for an agricultural population. Nevertheless, the encouragement of the government has induced many German colonists and others to establish themselves in these countries, and to make available for the cultivation of grain the thick layer of black mould which composes the soil. The *wheat* of these countries, called the *wheat of Odessa*, is excellent, and of extraordinary abundance; it is sold on the spot at extremely low prices; thus it is from Southern Russia that Western Europe obtains its supplies of wheat, whenever it is visited by dearth. In certain particularly favored and sheltered districts, vineyards are found, whose products are of middling quality, but whose vine stocks it is necessary to embed in earth before the winter. One production which abounds is the *melon*, especially the *watermelon*, and seems ordained expressly to compensate for the deficiencies of the steppe. The juice of these melons is so abundant that it is capable of supplying the place of water; at dinner and breakfast, throughout Southern Russia, each guest cuts a slice, of which he tastes from time to time, as in our countries we should sip a glass of wine and water. *Cucumbers* also occupy a prominent place on the Russian table.

Animals. — In the high grass of the steppes exist *terrier hares*, graceful little creatures of the jerboa species, which one encounters at every step, erecting themselves on their hind legs, for the purpose of looking about them. The women use the fur of these animals for bordering their garments, or even for making entire robes. These inoffensive animals are the principal food of foxes, wolves, wild dogs, and vultures. The wolves of the steppes,

smaller than those of the forests, are distinguished by their habits of digging for themselves burrows. They attack horses, sheep,



Wolf.

and sometimes even carry away children. Therefore each farm is surrounded by hedges 12 or 15 feet in height. The houses are protected day and night by numerous packs of half-wild *dogs*, of which no care is taken, and which, as soon as released, escape to the steppe in pursuit of game, whence they only return when driven by the cold of winter. *Bustards* abound no less in these countries than in the Crimea. *Lizards* and *serpents* are frequently met with; numerous *frogs* make their appearance immediately after a rain. *Locusts* ravage the fields, which seem as if blasted by fire.

But the animals, which, together with the wheat, constitute the principal wealth of Southern Russia, are its horses, sheep, and horned cattle.

Notwithstanding conflicting statements, the steppes no longer contain wild horses. Certain great proprietors possess several herds, but rarely does a single one exceed 1000 in number. Each troop is under the guardianship of a keeper, responsible for every head of cattle lost or stolen. The keepers are fierce and determined men, always on horseback, in order to be on guard, lest the horses, by straying to a distance, should become exposed to

the attacks of wolves. They are armed with a large whip, 15 or 18 feet in length, with a noose or sling to seize the horses, and with a club to fling at the head of the wolves. In winter these horses suffer cruelly from cold and hunger. At night they are but slightly protected from the north wind beneath a miserable shed; by day they are obliged to resort to the plain, and remove the snow with their hoofs in order to procure a little grass; if the inclement season is prolonged beyond the usual period, half of them sometimes perish. 15 or 20 stallions of each troop often strive together in terrible combat. Sometimes also, on occasion of alarm, they throw themselves upon the wolves, tearing them with their teeth, or trampling them under foot, whilst the mares range themselves in a circle, the colts being placed in the centre. They often kill the wolf with a single blow of their powerful hoof. The only labor which is required of these horses is to tread out the wheat sheaves on the threshing floors, until purchased by merchants, or government agents, to be trained, or driven to the fairs.

The wealth of the nobles of these countries is principally estimated by the number of their *sheep*. Some among them possess 100,000, the greater part remarkable for their enormous tails, which consist almost wholly of a mass of fat, very much in request among Russian and Tartar epicures. The race of merino sheep is rapidly increasing, and the Russian wool is daily acquiring greater importance.

Some idea may be conceived of the immense number of the *horned cattle* from the fact that oxen are not generally killed in this country, as an article of food, but for the sake of their tallow and hides. The herds are composed of from 100 to 800 head. In prosperous years, when the oxen are sufficiently fattened, they are sent to the tallow manufactories or *salgans*, which include vast yards or slaughter houses, where these animals are slain; working buildings, consisting of rooms where the hides are salted, and others, where are vast caldrons capable of containing 10 or 15 oxen, cut in fragments; a little water is then added, heat is applied, and the tallow is soon seen swimming on the surface, which is then collected and placed in casks. Russia supplies the greater part of Europe with tallow. Sufficient is thence obtained

annually for the manufacture of 700,000,000 of candles, and 100,000,000 pounds of soap.

The most original portion of the population are the *Cossacks*, of the Slavonic race, like the other Russians, very ill favored, but little civilized, almost nomadic, and living on the produce of their cattle and the fishery. In past centuries they formed, under the conduct of their chief, called *hetman*, a military republic, where every thing was in common, and from which women were excluded. It is now a very warlike population, which furnishes Russia with a military force of about 100,000 soldiers. The Cossacks are invaluable, as light cavalry, for protecting the flanks and outposts of armies.

Accustomed to live in the midst of turbulent tribes, they are always on the alert, and rarely fall into an ambuscade. Neither have they their equals in the world for harassing troops beating a retreat. Rushing to the charge uttering a terrible huzza, the horsemen disperse, each fighting on his own account; but their instinct guides them more unerringly than all the skill of a general. The western nations always recall with terror their irruptions in 1814 and 1815. The Cossacks raise many horses of angular and inelegant forms, but which are inured to fatigue, rapid in their course, and of a sobriety comparable to that of the ass.

The other inhabitants of Southern Russia are Russians properly so called, (of whom we shall speak hereafter,) and German colonists, very active and industrious agriculturists, to whom the country is greatly indebted for its recent prosperity.

Central Russia, partly covered with immense forests of oaks, beeches, and firs, presents beautiful cultivated plains, fertile in grain and fruits. Wheat, rye, barley, and oats abound; there are also cherries and apples. Among the latter may be found certain species which weigh, singly, as much as four pounds, and have a very agreeable vinous taste; another very common species bears the name of *transparent apples*, and when seen by daylight their seeds may be counted. Hemp and flax succeed to perfection, and are of excellent quality. All these vegetables grow and develop with remarkable rapidity; for although the winters are long and cold, the summers are very hot and dry.

The domestic animals — oxen, horses, and sheep — are very numerous ; much large and small game is hunted ; the wolves are formidable in winter. When the earth is covered with a huge bed of snow, and their appetites are keen, they furiously pursue the sledges, and it is sometimes necessary to abandon one of the horses to these animals, in order to gain time to escape. Thousands of them are killed every year. Often, in order to entice them within musket shot, a young pig, imprisoned in a bag, is paraded through the woods on a sledge : this animal, which cries its loudest, attracts the wolves to the spot, where they become the prize of their pursuers. Ordinarily, however, the human voice frightens them ; the sound of the horn, and especially that of the violin, puts them to flight ; the tinkling of bells also alarms them : thus every sledge is provided accordingly.

Central Russia contains very rich iron mines. The immense quantities of metals exported by Russia into other countries are chiefly obtained from the Ural, and from its possessions in Asia.

This region is the primitive country of the Russian people, and thence they have become distributed among many neighboring provinces. The Russians are the most powerful nation of the Slavonian race. They are of large stature, have florid complexions, robust frames formed for privation, and remarkably good eyesight. Although not gifted with the genius of invention, they are skilful imitators of the arts and manners of nations more advanced than themselves. Hence their facility in acquiring all the languages, and the remarkable degree of polish which stamps all the Russian society, although in many respects the mass of the nation are still plunged in the depths of profound ignorance. They are moreover gay, careless, fond of mirth, dancing, and music, and great lovers of brandy. They are said to be servile and cringing to their superiors, haughty, greedy, rapacious, and pitiless towards their inferiors. They are by nature religiously disposed, and are very much attached to the Greek church ; but their faith exerts little influence over their life, and their ceremonies, as well as their superstitions, are numerous. The clergy is, however, invested with little power ; the nobles possess more : the nobility is divided into 14 grades. The burghership is almost null, and exists only in the cities. The

greater part of the peasants are serfs, that is, slaves of the nobility, compelled to labor for the benefit of the nobles, or at least deprived of the right of quitting, without their permission, the lands to which they are forever bound, unless manumitted.

Northern Russia is composed of two very dissimilar plains — the *plains of the Baltic*, the soil of which is suitable for grain, rich in pastures, and clothed with vast forests of birches, firs, and especially those magnificent pines of Riga, or of the north, which we have already mentioned, and which are so much sought for the masting of ships; and the *Boreal plain*, extending towards the White Sea, of a wild aspect, and whose cold and damp soil is sometimes covered with vast forests, sometimes with lakes, marshes, or *tondras*, similar to those of Siberia, intermingled with pastures and fields, where barley and flax are almost exclusively cultivated.

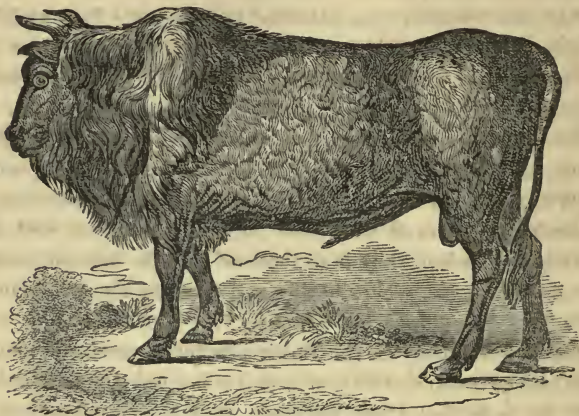
Russia, principally in the Baltic provinces, produces enormous quantities of hemp and flax, of which ropes are manufactured, and cloth for sails and other purposes, constituting almost the sole occupation of the cold regions bordering on the White Sea. Russia, it is said, annually exports to the west a vast amount of hemp and flax, woven or in bulk.

The *population* is composed of *Russians* and many other nations, over whom they have obtained sway by successive conquests; thus, on the borders of the Arctic Ocean, various Mongolian tribes, such as the *Samoieds*, who raise reindeer, and are half heathen; protestant and formerly Swedish populations on the borders of the Baltic Sea, such as the *Finns*, of Finland, and the *Laplanders*, all very ancient and differently celebrated.

Poland, a truly flat country, without fixed boundaries or mountainous regions, is situated west of Central Russia, from which it is separated by the *Marsh of Pripets*, twice as extensive as Switzerland, and whence issue many important rivers. Its climate is cold and damp, its winds violent and rainy. Poland was for a time the granary of Europe, and it still exports much wheat to the west, through the Baltic. The soil, for the most part sandy or marshy, is more favorable to pasturage than to agriculture.

Among the remarkable *animals* of these countries are found, towards the north-east, in Lithuania, the last remnants of the wild

oxen, called *urus*, or *aurochs*, which were formerly found in all the large forests of Western Europe; they are distinguished for their enormous horns, thick mane, long beard, and for their



Wild Ox.

hump covered with hair. A little insect, from which the inhabitants of these regions derived a considerable revenue before the importation of the *cochineal* from America, is the *kermes of the north*, or *cochineal of Poland*—an insect which lives under ground on the roots of certain plants, and yields a color almost as beautiful, but a little darker than the cochineal. In Poland and Russia it is still employed for dyeing various materials. The enormous quantity of bees that swarm in this country are also worthy of mention, which furnish, as in Russia, much honey and wax.

Population.—The Poles are large, strong, and vigorous, vivacious, elegant in their manners, and of a fervent courage, which has obtained for them the appellation of the *Northern Frenchmen*. They are almost all Catholics; but their violent persecutions of the Greek or Protestant Christians, the tyranny of the Polish nobles towards their serfs, and their own anarchical instincts, have brought them under the yoke of their neighbors, and especially under that of the Russians.

GERMANIC PLAIN.—The plains of Germany extend west

of Poland, between the Carpathians, the Erz-Gebirge, and other small and more westerly chains, on one side, and the Baltic and the North Sea on the other.

Aspect. — These plains are essentially sandy, dotted with small lakes in the eastern part, (Prussia,) intermingled with heaths and turf pits in the west, (Hanover and Westphalia;) notwithstanding which there are in these different countries very fertile places of flourishing aspect.

The *climate* is temperate, but harsh; no mountain sheltering Lower Germany from the icy winds of Siberia, which sweep unimpeded across the vast plains of Russia and Poland.

The *vegetation* is not generally rich, except in certain places favored with a particularly fertile soil. The principal productions are rye, wheat, barley, oats; a tolerable abundance of fruits, but no wines; many hops; very fine legumes; enormous cabbages, which, hashed fine and properly salted, constitute, under the name of *sour-kROUT*, a very wholesome and highly appreciated dish. Beet roots are used in the manufacture of sugar, and it was indeed in the centre of Lower Germany, at Brandenburg, that this manufacture originated.

The *animals* present no uncommon characteristics; the *horses* of Hanover, and those of Mecklenburg, (south of Jutland,) are much esteemed; *geese* abound both in the east and west; the small lakes are fruitful in fish; the forests are well stocked with game, carefully guarded by the nobles; *bees* are reared in Hanover, and *silk worms* in Brandenburg. The cattle are quite numerous; the sheep of Germany yield celebrated wool, and the *Westphalia hams* have a universal reputation.

The *population* are remarkable for their air of health, their tall stature, blue eyes, and light hair. The Germans are heavily moulded, and awkward in their manners; they love their ease, their pipe, and the fireside; they are characterized by too great susceptibility, but they are very amiable, honest, patient, constant in their affections, serene, and serious. They are fond of quiet and repose, and their life is preëminently one of thought and sentiment; they are naturally visionaries, philosophers, or artists. Nowhere is reading so general, and nowhere is education more solid or more widely diffused through all classes

of society. Germany produces an immense number of writers and distinguished scholars. The Germans are naturally a religious people, whose deep faith attaches little importance to ceremonies and external forms: this faith dwells in the heart rather than in the head and on the lips; but it is not sufficiently active, and often expends itself in vague reveries. Almost all Lower Germany is Protestant; but there are a considerable number of Catholics at the west, especially in Westphalia.

PLAINS OF HOLLAND AND BELGIUM.—West of Lower Germany lie the damp plains of Belgium and Holland.

Their *aspect* is generally very monotonous; they, however, vary perceptibly, according to their greater or less distance from the sea. At the south of Belgium the plain is somewhat broken by the Ardennes and other mountains connecting with the Vosges. This is a fertile and well cultivated country. Farther north are turfy marshes, alternating with sandy wastes covered with heath, but which, within a few years, an attempt has been made to convert to agricultural purposes, by the establishment of pauper colonies, and canals for irrigation. Farther at the north-west are found the *polders*, very fertile lands, reclaimed from the waters of the ocean. The soil of the polders is first formed of a mixture of vegetable matter and slime, washed up by the rivers, and which the reflux forces the latter to deposit at their mouths; the microscopic animalcula or infusoria, (see Bohemia,) which are organized to live in the sea, die by myriads as soon as the fresh water from the rivers becomes blended with the salt water, forming by their shells, which mingle with the mud, excellent alluvial soils.

In order to redeem these precious soils from the sea, it is first requisite that at low tide the waves, violently driven by the west winds, should have accumulated, at the point where they cease, great sand banks, which, gradually rising, and augmented by the labor of men, become *downs*. These are fortified by enormous wooden joists, and on the side towards the sea with walls composed of huge masses of rock obtained from Norway. The down is thus transformed into a *dike*, bordered or surmounted by a road, and capable of resisting the waves which beat against it at high tide. When it is once completed, and bound to the main land by

its two extremities, it is then only necessary to expel from the space thus enclosed the salt water which yet remains there; and for this purpose most of the windmills are employed, which are to be seen on all sides in these countries, and the number of which is estimated at about 9000. By means of pumps set in motion by these mills, multitudes of low and marshy soils in the interior have been drained, from which turf was formerly procured, and which, surrounded by dikes and ditches, are now devoted to agriculture. As most of these polders are much below the level of the sea, the action of the windmills is constantly necessary, to prevent the infiltration of the neighboring waters into the low lands, in the same manner as the dikes are constantly required to arrest the salt water in its efforts to submerge entire provinces, which at high tide are much below the level of the ocean. Thus, if one of these costly and useful dikes becomes ruptured, the terrible disasters caused by the sudden invasion of such an enormous body of water may readily be conceived. Nearly 200 great inundations have occurred in Holland since the Christian era; instances are alleged in which more than 100,000 persons have been ingulfed; one of the most terrible took place in 1825. This vast number of marshes, dikes, and canals, covered with ships, which seem to move in the midst of windmills and avenues of trees of the richest verdure, impart to the greater part of Holland an aspect of an extremely unique and original character, heightened by the presence of numerous charming country residences, towns, and villages of painted houses, washed externally from top to bottom every week, and all of unparalleled neatness.

The *climate* is damp and cloudy, but not very cold; however, in winter the canals and meadows are covered with ice and skaters.

Holland completely lacks minerals, and turf is almost the only combustible. Belgium, on the contrary, is the richest country of the continent in *pit coal*, and exports considerable quantities, especially into France; much *zinc* and a little *iron* are also found.

The *vegetation* is particularly rich and beautiful in the polders and other soils, redeemed from the waters. There may be seen

superb meadows, of a verdure which is nowhere else encountered, and where great numbers of cattle are reared. Belgium and Holland are tolerably productive in cereals, tobacco, madder, and excellent vegetables ; but the principal wealth of these countries is *flax*, which, in Flanders especially, is of such fineness that two pounds of thread of the first quality have sold for as much as 600 dollars. Holland is renowned for the skill of its florists, as also for the beauty of its hyacinths and tulips which in the last century were the object of a perfect mania, and sold at fabulous prices.

The *animals* of these plains present nothing extraordinary. Holland raises, in its meadows, fine horned cattle, by means of which it supplies England and the countries of the north with butter and cheese. The horses of Flanders are famed for their strength and vigor ; and the same may be said of those of Friesland, in the north of Holland. The marshes of these countries are the favorite abode of *storks* and *herons* — large birds, remark-



Stork.

able for their long legs and pointed bills, and which, accustomed to live on the borders of the water, devour many fish, frogs, and reptiles. The stork is an almost universal object of public gratitude, on account of the great number of serpents which it destroys. Its tenderness for its young is also much commended. Holland, on the other hand, is perpetually endangered by the incessant attacks made by the *taret* upon its dikes and vessels. The *taret* is a mollusk, a species of whitish worm, sometimes a foot in length, whose head is provided with two valves, or shells, of the size of the two halves of a hazle nut. Its mouth, furnished with an incredible number of small teeth, in the form of a saw, can

in a few months completely perforate planks and joists of oak or fir. Thus ships have been known to part in open sea, beneath the feet of the sailors, whom nothing had forewarned of the danger, and the piles of the dikes give way almost without strain. In order to prevent the ravages of these dangerous animals, vessels are sheathed with copper.



Taret.

The *population* varies much in the different countries, which we have condensed under one head. The *Dutch* have simple, impassive manners, and a phlegmatic temperament; but on the other hand they are active, industrious, persevering, reflective, and frugal, besides being courageous, of great uprightness, and of remarkable neatness. Their schools, universities, and other scientific institutions have always been celebrated, and they are one of the best educated nations in Europe. They are generally Protestants.

The *Belgians*, who are almost all Catholics, have not so marked a character. They are neither as well informed, as wealthy, nor as good agriculturists; among them, however, manufactures are far more flourishing, especially in Flanders, celebrated for its linen; but the eye every where encounters throngs of beggars. Belgium is one of the most densely peopled countries of the European continent.

PLAINS OF FRANCE. — The *plains of France*, situated west of the Vosges, the Cote d'Or, and the Cevennes, are naturally divided into three parts: 1. Northern France, or borders of the British Channel; 2 and 3. The western plains, which the mountains of Auvergne and Limousin divide into two parts — the plains of the Loire and those of the Garonne.

Northern France, generally of a favorable aspect, and very well cultivated, partakes somewhat of the damp climate of Bel-

gium. The *minerals* are pit coal, a little turf, and iron. The *vegetation* is almost every where rich and abundant, especially at the west, in Normandy, whose magnificent pastures are universally renowned. The vine, which does not generally succeed, is replaced by cider, the fermented juice of apples or pears, except towards the south-east, whence are procured the champagne wines, celebrated throughout the world. These plains abound in wheat and cereals of all kinds, potatoes, flax, hemp, &c.; the beet root is much cultivated for the manufacture of sugar; the poppy, from whose seed is extracted a much esteemed oil; rape seed, which serves a similar purpose; hops, tobacco, &c. Superb cattle are raised in the fine pastures of Normandy, and elsewhere; the Norman horses are also of some repute.

The *plains of the Loire*, or of the centre, differ essentially in aspect, according to their situation. They are generally very beautiful on the borders of the river, especially in Touraine, which has been entitled the *garden of France*; elsewhere, on the contrary, the country is covered with marshes and small marshy lakes, of a gloomy appearance, particularly in the south-westerly portion, and more especially in the arid country called *Sologne*; in the provinces adjacent to Bretagne, (Maine and Anjou,) the soil is partly covered with vast heaths, or intersected by multitudes of quickset hedges.

The *climate* is generally mild, but insalubrious, in those countries which abound in small ponds of stagnant water.

The *minerals* are fire stones and lithograph stones, in the environs of Sologne, vast slate quarries in Anjou, and mines of iron and pit coal, which are not very productive, in various places.

The *vegetation* varies according to the nature of the soil, which is generally fertile. The prunes of Tours are justly famed, as also the dried apples of the environs, the wheat of the plains of Beauce, at the north-east, the saffron of Catinais, still farther east, the flax and linen cloth of Maine, and the rich pastures of Vendee at the south-west, near the sea.

Among the *animals* may be mentioned the fine oxen, which are raised in Vendee; the mules which Poitou, east of Vendee, furnishes for the use of France and for a part of Spain; and the sheep of Berry, east of Poitou. Maine prides itself upon its

poultry, and especially upon its fat pullets: at no great distance, Perche produces strong horses, which enjoy a certain reputation.

The *Plains of the Garonne* present, generally, a flourishing aspect, except towards the borders of the sea at the south-west, where are found immense sandy or marshy heaths, bordered with downs of sand, which the wind formerly transported even into the cultivated lands. These invasions of sand have more recently been arrested by plantations of maritime pines, whose products in wood, turpentine, pitch, and tar have attached a certain value to lands formerly almost deserted, or traversed only by a few poor shepherds mounted on long stilts. The north-western coasts, on the contrary, are low and damp, and covered with salt marshes, where the best salt in France is obtained by evaporation.

The *vegetation*, almost every where rich and beautiful, furnishes various products, the principal of which are wines and renowned brandy. The *Bordeaux wines*, in the most western portion, are celebrated throughout the world. The *plums of Agen*, towards the centre of these plains, and the *truffles* of Perigord, at the north-west, are of high repute. The truffles are subterranean mushrooms, which, in autumn, when they are ripe, have a black skin resembling shagreen, and whose brown, marbled, and very odoriferous flesh constitutes an extremely delicate dish. They thrive especially in the neighborhood of oak woods, and their presence is detected by the odor which they exhale. Frequently, for discovering and uprooting them, recourse is had to hogs, which are very fond of them.

The *animals* furnish nothing remarkable.

The *plain of the Saone* and the *Rhone*, which is situated between the Jura and the Alps on one side, the mountains of the Vosges, the Cote d'Or and the Cevennes on the other, presents very diversified *aspects*. Rich and fertile on the borders of the Saone, it is marshy and thickly studded with ponds in the Bresse, a species of peninsula between the Saone and the Rhone; and whereas it is beautiful and fertile along the Rhone, in the vicinity of the sea it is sterile and partly covered with ponds and salt marshes.

The *climate* is mild in the neighborhood of the Saone, unhealthy in the Bresse, and dry and hot near the sea.

The *vegetation* is generally quite luxuriant. This plain is noted

for its rich vineyards, whose products, known under the names of *Burgundy* and *Rhone wines*, are of great repute. The lower portion of the valley of the Rhone produces many vegetables of the warm climes—olives, figs, almonds, mulberries, melons, especially watermelons, and a very great quantity of *madder*, whose root yields a red dye, much in use at the present time.

The *animals*, which are far less numerous than in the north of France, deserve little mention. Near the sea, the rocky and sterile plains of La Crau are the winter resort of flocks of wandering sheep, which in summer ascend to the high pastures of the French Alps; the islands at the mouth of the Rhone contain large troops of almost wild horses. The Bresse furnishes considerable numbers of turkeys and fat pullets, and its ponds abound in fish.

PLAIN OF THE RHINE.—This plain, situated between the Black Forest, the Vosges, and the northern portion of the Jura, is almost universally a country of the richest and most fertile aspect. It might be termed the *orchard of Germany*; and in truth, in many places, it may be said to represent vast forests of fruit trees, whose products, carefully dried, are largely consumed by all the inhabitants, and exported to a distance. This country, rich in cereals, legumes, flax, hemp, &c., produces also famous wines, known under the name of *Rhine wines*. It is, moreover, celebrated for its mineral springs, which attract many bathers, and whose waters are despatched to a distance every year, by millions of bottles. This is one of the most picturesque and smiling countries among the plains of Europe.

PLAIN OF HUNGARY.—This vast country, situated between the last link of the Alps at the south-west, and the Carpathian Mountains at the north-east, is somewhat diversified and intersected with hills, forests, or marshes in the western part; but the eastern portion, Hungary proper, exhibits a most original and striking aspect. The traveller, penetrating into the region which extends from the Danube to Transylvania, might fancy himself transported into another continent. He would perceive only illimitable plains, destitute of roads, trees, or houses, smooth as the steppes of Asia, or as the desert, and sometimes even affording the singular spectacle of the *mirage*. On the banks of

the Danube and other rivers, impracticable marshes, whose entire surface has been estimated at 300 square leagues, forbid the cultivation of whole districts, and fill the air with pestilential exhalations. Elsewhere these sandy plains are covered only with heath, or meagre grass, and even in many places, especially towards the south, may be encountered actual downs of moving sands. Although well peopled, the country seems entirely deserted. Hungary having been exposed for centuries to the devastating incursions of the Turks, the cultivators have acquired the habit of collecting in villages to an extent unequalled in Europe, insomuch that 30 of them are computed to contain each from 10,000 to 30,000 inhabitants. The peasants are obliged to travel great distances during the week for the purpose of cultivating their fields, returning to spend the Sabbath in the town; simple huts shelter them during the term of their labors; for the remainder of the year the fields are actually abandoned, (except by the shepherds,) and present the aspect of a desert.

The *climate* is one of extremes, like that of the steppes of Asia, very hot in summer, and of a piercing cold in winter, so that the horned cattle, which remain the whole year in the open air, perish in great numbers during the severe winters. In summer the air is scorching during the day, and damp and cold at night. The climate is, however, scarcely unhealthy, except in the vicinity of the marshes.

The *minerals*, gold, silver, copper, salt, opals, &c., are among the treasures of Hungary; but sufficient has been said concerning them in connection with the Carpathian Mountains.

Vegetation.—A rich black mould, containing not a single stone, composes the soil of the northern portion of these plains, and is admirably adapted to the cultivation of wheat. This wheat is of superior quality, and Hungary would be enabled to furnish considerable quantities if it were not for the difficulty of threshing, which is always performed by horses or oxen, and before the accomplishment of which, the sheaves are often overtaken and damaged by the hurricanes. The Hungarian peasant seems to have brought with him from the steppes of Asia the hereditary antipathy of the Orientals for trees; thus this great plain is generally deficient in wood, the want of which for fuel is supplied

by turf, reeds, straw, and other combustibles of this nature. In the western part, the Forest of Bakony is stocked with oaks of the greatest beauty; but it is decried on account of the wild hogs by which it is tenanted. Among the cultivated vegetables should be mentioned excellent tobacco, which ranks among the best in Europe; hemp reputed for its solidity; flax, maize, a little rice, and even cotton, towards the south; justly celebrated wines, of which the most famed are those of *Tokay*; there are four qualities of the latter, the best of which, the *essence*, is the wine which flows from the grapes simply heaped on the press.

Animals.—The rearing of cattle is better understood than the cultivation of the earth. The horses are small and slender, but active and vigorous. The horned cattle are of the finest stock, gray, with hair and horns of extraordinary length; they are much sought by the inhabitants of the neighboring countries, as likewise the hogs, which principally inhabit the western portion. The Hungarian sheep is distinguished for its great size and its spiral-shaped horns; its wool was naturally short and coarse, but since the introduction of the merinoes, the race of sheep has improved so rapidly that the highest profits of the field owner proceed from the sale of his wool. Buffaloes are raised in the marshy portions of the south; a great quantity of *leeches* are also obtained there; silk worms have not succeeded, but the bees furnish honey and wax, which is exported in large quantities. Game is very abundant.

The *population* is composed principally of *Hungarians*, or *Magyars*, of Asiatic origin, large and robust, with hard but expressive features, energetic and valorous, passionately fond of glory and of their nationality. They are renowned for their bravery; they, however, prefer the peaceable life of the agriculturist and shepherd to war, manufactures, or commerce. They are divided into nobles and serfs. The nobles are subdivided into *magnates*, or lesser nobles, who possess a third of the land, and into nobles of a still inferior rank, the greater part of whom are reduced to the condition of artisans or peasants.

The *Magyars* principally occupy the Hungarian plain, properly so called; but as seigneurial proprietors they extend even to the mountains, where they have never been able to obtain absolute

dominion over the energetic populations of the Slavonic race who are established there: the *Croats* and the *Slavonians*, warlike and half wild, inhabit the south-west; the *Slovacks*, active, enterprising, and qualified for all trades, the north-west; and the *Rusniaks*, the most barbarous of all these people, reside at the north-east. The Hungarians are partly Protestants and partly Catholics, the Croats and Slavonians are Catholics, the Slovacks mostly Protestants, and the Rusniaks of the Greek religion.

PLAIN OF WALLACHIA. — The plain of Wallachia, or Lower Danube, is situated between the southern portion of the Carpathians of Transylvania, the northern ramifications of the Balkan Mountains, and the sea. The length of the mountains, forests, cultivated lands, and vineyards impart to this country a diversified aspect; lower, high grass, concealing shepherds and cattle, alternates with steppes covered with rolling stones; towards the Danube are vast marshes bristling with rushes. The climate is mild and very salubrious in the vicinity of the Carpathians, but the forests and stagnant waters of the plains diffuse in certain portions a dangerous moisture. The rich and fertile soil is capable of all the productions of temperate climates, but is generally poorly cultivated; it furnishes light wines, esteemed in Russia, and much maize, the principal food of the inhabitants. Wallachia might supply Western Europe with a portion of the wheat which it habitually procures from the south of Russia.

The *animals* possess few striking points; buffaloes are encountered in the vicinity of the Danube; the *sheep of Wallachia*, with spiral and upright horns, yield enormous quantities of wool; innumerable swarms of bees produce an excellent wax; one species, among others, furnishes the green wax of which candles are made, which, when lighted, exhale a most agreeable perfume.

The *population* boast of being descended from the ancient Romans; the Wallachians distinguish themselves by no other name than that of *Roumeni*, and their language has in truth some striking points of resemblance to the Latin. Their villages are poor, presenting for the most part only a heap of cabins. Among them are found many Jews, and especially *Zingares*, (those nomadics originally from India, improperly designated in other countries by the name of Bohemians,) always roaming, transport-

ing hither and thither their families and trifling possessions in wagons drawn by buffaloes, the men practising the trades of wheelwrights and blacksmiths on week days, and of mountebanks on Sundays, whilst the women tell fortunes with cards, and at the same time practise swindling wherever they can elude the vigilance of the peasants.

Besides these low plains, which are located in the European continent, properly so called, there exist a certain number of others in the great peninsulas. Exclusive of the *plain of Sweden*, which constitutes all the eastern part of Scandinavia, we have to mention three others of considerable importance in the peninsula of the Pyrenees, and in Italy — *Arragon, Andalusia*, and the *plains of the Po*.

PLAIN OF ARRAGON. — This plain, situated between the Pyrenees and the Iberian Mountains, exhibits, generally, an appearance of little prosperity, except on the borders of rivers, where there are some very fertile districts. It is, however, a soil which might be rendered very productive, if pains were taken to irrigate lands which are now consumed by drought; but the greater part of the fields are stripped of trees, and left fallow; elsewhere the soil is impregnated with salt, and many *salados*, or salt rivers, are met with. The productions are wheat, wine, olive oil, flax, hemp, and fine wools.

But, if agriculture is neglected in Arragon, properly so called, it is quite otherwise with the lower portion of the basin of the Ebro, (Catalonia,) where the country is mountainous and of little fertility, but where irrigation is extensively practised. There a naturally stubborn soil has been converted, through the indefatigable labors of the Catalonians, into a truly productive country, inasmuch that it is indeed, of all Spain, the portion which presents the most activity and industry. All kinds of grains, olives, many fruit trees, and excellent wines are there cultivated; Catalonia produces a great quantity of *hazel nuts* and *cork*, with which it supplies almost all Northern Europe. A curiosity of this country is the famous *salt mountain of Cordova*, 500 feet in height, and a league in circumference, almost entirely composed of salt, which rain, however, does not dissolve. Of it are carved crosses, altars, figures of saints, candlesticks, &c., transparent as crystal, and apparently as hard.

PLAIN OF ANDALUSIA. — This plain, situated between the Sierra Morena, the Sierra Nevada, and the sea, is naturally one of the richest countries in the world, but now presents a most melancholy spectacle of decay; some districts are depopulated and deserted, and others incrustated with salt, where one frequently encounters salados, or lagoons, which during the heat of summer are covered with a solid crust of white crystal salt.

The *climate* is dry and very hot, and Andalusia is moreover very much exposed to the disastrous effects of the *solano*.

Although agriculture is but ill understood, and neglected, the *vegetation* is extremely rich and exuberant in fertile places, so that Andalusia may justly be termed the *cellar and granary of Spain*. It produces, indeed, twice as much wheat as it requires for home consumption; abundant crops of barley and maize; famous wines, among others those of Xeres; forests of olive trees, whose fruits, larger than are found elsewhere, furnish the ordinary food of the people; cotton, sugar cane, mulberries, and large oranges: the cactus, on which the cochineal is reared, grows wild in abundance on the sides of the roads and on the rocks, and its fruits serve as food for the poor.

The *animals* are numerous and of superior breed. The finest horses in Spain are raised in Andalusia; they almost equal in fleetness those of Arabia, from which they originated. This province is one of the winter sojourns of the merino sheep; it produces very superior oxen, exquisite honey, and a great abundance of game.

PLAIN OF THE PO. — This considerable plain, which extends from the Alps to the Apennines and the Adriatic Sea, bears the name of Piedmont at the west, and Lombardy at the east. It is a country naturally very well watered, and completely threaded with canals, dikes, and rivers, which in certain places render the country quite unhealthy. The soil is the most productive of Europe; it is capable of yielding three crops a year, without becoming exhausted. There are found the finest meadows of Italy, and the fattest cattle, and there also is cultivated the hard species of wheat, which is used in the composition of the pastes and macaroni, to which the Italians are so partial. The wheat grows between the rows of mulberry trees, which partially

cover the fields, and serve to nourish an enormous quantity of silk worms, while vine branches suspend their festoons from one of these trees to the other. Immense rice plantations occupy the dampest and most unhealthy portions of this rich country.

SECT. 6. LAKES OF EUROPE. — Europe contains a great number of lakes, very unequally distributed over its surface, where they form several principal groups.

LAKES OF THE SWISS PLATEAU. — The Swiss Alps include many celebrated lakes, situated at the point where their principal valleys open upon the plateau. These lakes, which are peculiar to this portion of the chain, constitute one of the principal beauties of Switzerland, to which they render material services. The rivers and torrents there become tranquillized and deposit their slime; when the snow melts and the high valleys are submerged, the lakes, distributing these superabundant waters over a large surface, preserve the lower countries from sudden and disastrous inundations. Thus it is the function of these lakes to calm, clarify, and regulate the rivers.

Lake Lemán, or *Lake of Geneva*, the most beautiful of all the lakes of Europe, situated at the south-west of the Swiss plateau, extends, in the form of a crescent, opposite the snowy peaks of Mont Blanc, and one of the most charming portions of the Alps. By turns smiling, picturesque, or grand, its happy borders everywhere present an air of ease and prosperity which enchants the traveller. It is situated about 1230 feet above the level of the sea; its length is 45 miles, its breadth from 1 to $9\frac{1}{2}$ miles, its greatest depth 984 feet. Its transparent and deep blue waters are subject to a singular and inexplicable phenomenon called *seiches*, consisting of a sudden rise and fall, which changes its level about a foot. Navigation on this lake is active, and attended with little danger. Among the 29 species of fish which it contains, many are excellent; *trout* have been caught there of 40 pounds weight. Its *perch* and its *umber*, fish of the salmon species, are also valued; but the most abundant fishery is that of the *feras*.

Lake Neufchatel, north of the preceding, and at the foot of the Jura, is much larger and less deep than Lake Lemán. Its navigation is quite active, and sometimes dangerous, on account of

sudden gusts of winds proceeding from the Jura. It abounds in fish. Its borders, although not remarkable for their sublimity, are generally well cultivated and covered with vineyards.

The small lakes of Morat and Bienne, which communicate with the preceding, may serve to facilitate the transportation of merchandise; but they are only noted for the historical recollections which they awaken.

Those of Brienz and Thun, which receive all the waters that flow from the glaciers and magnificent valleys of the Bernese Oberland, disclose at every step grand and enchanting points of view, which every summer attract crowds of strangers into these countries. These lakes, from 3 to 4 leagues in length, and less than a league in breadth, are very deep; that of Brienz attains even 2400 feet in depth. On their borders magnificent cascades delight the eye.

The *Lake of Lucerne*, or of the *Four Cantons*, the cradle of Helvetic liberty, is the most poetic of the Swiss lakes. It is remarkable for its numerous gulfs and indentations, and for its varied prospects; sometimes graceful and placid, sometimes wild, grand, and sublime, and each phase recalling glorious or touching reminiscences. Encircled by high and steep mountains, with narrow and profound gorges, this lake is exposed to sudden and dangerous gales of wind.

Lake Zurich, of little breadth, but extremely elongated, is one of the most smiling in Switzerland. Its borders are covered with numerous rich, beautiful, and thriving villages, and admirably cultivated fields. At a certain point in the eastern part, where its two shores approximate, it is crossed by a bridge 1800 feet long.

Lake Wallenstadt, east of the preceding, presents, on the contrary, the wildest and most menacing aspect. Perpendicular mountains overshadow a portion of its borders; its tempests are sometimes terrible, and the condor there seems to have established its principal quarters.

Lake Constance, which has been surnamed the *Sea of Suabia*, is situated at the north-east of the Swiss plateau, which it separates from the German or Bavarian plateau. It is of nearly the

same extent and depth as Lake Lemán; but its smiling and fertile borders, covered with vineyards, and very well populated, exhibit nothing grand or imposing. It forms at the west two deep gulfs, and contains many small islands; among others, one towards the east, on which the Bavarian town of Lindau (a Venice in miniature) is built on piles.

This lake gives rise to quite an active commerce. Like almost all the preceding, it is furrowed during the fine season by steamboats. Its fishery is abundant.

LAKES OF ITALY.—At the base of the southern portion of the Swiss Alps, and in other parts also of the peninsula of the Apennines, exist a certain number of celebrated lakes.

Lake Maggiore, at the foot of St. Gothard, is a vast sheet of azure water, incessantly plied by multitudes of small sail boats, and encompassed by the most beautiful hills in the world. This lake, 14 leagues in length, and less than 2 in breadth, is of an extraordinary depth, which is computed at 2400 feet. But the most curious feature which it presents is the four *Borromean Islands*, the principal of which forms a pyramidal pile, consisting of ten stories of terraces, covered with magnificent orange or lemon trees with enormous fruits, and laurels, some trees of which attain as many as 8 feet in circumference, and 100 feet in height. These terraces are every where ornamented with statues, in very bad taste; but here and there may be seen charming grottos of shells opening upon the lake.

The small *Lake of Lugano*, east of the preceding, into which it empties, is surrounded by smiling and fertile hills; it is, moreover, very productive of fish, and furnishes an abundance of delicate trout.

Lake Como forms, still farther east, a basin of a truly enchanting aspect. White country houses every where rise upon its banks, amid clusters of oleanders, olives, and especially of mulberry trees, which give rise to the principal manufacture of the country—that of silk.

The other Italian lakes—that of *Garda* at the foot of the Alps, those of *Perouse*, (anciently *Thrasymene*), *Bolsena*, and *Fucino*, all situated at the west, or on the peaks of the Apennines—present nothing remarkable, with the exception of the

latter, which occupies the crater of an ancient volcano ; it is subject to extraordinary risings, which constantly threaten the neighboring inhabitants.

Lake Comacchio, situated north-west of the Adriatic, with the waters of which it communicates, contains a great number of floating islands—turfy soils, interwoven with weeds and roots, which, having been undermined by the waters, and detached from the shore, continue wandering over the surface of the lake ; many fish, and especially *eels*, come thither from the sea at cer-



Eel.

tain seasons, as if designed by Providence to serve as food for man. These fish, which somewhat resemble the serpent, are eaten both pickled and salted, and sustain on the coasts of the Mediterranean a well-deserved reputation.

LAKES OF HUNGARY.—At the foot of the final ramifications of the Alps, and at the west of the plain of Hungary, are found two quite remarkable basins.

Lake Balaton, 22 leagues in length and 6 in breadth, is, strange to say, only 30 feet in depth. Its borders are delightful ; and a great bathing establishment which exists in the neighborhood attracts many visitors every year. This is the only lake which nourishes the delicious *fagas*, (*perca lucio*,) whose white and tender flesh is much esteemed ; it usually attains 4 feet in length.

Lake Neusiedl, not far from the preceding, is much smaller, and of less depth.

LAKES OF RUSSIA.—Lakes abound in all the north-west of Russia, and particularly in Finland, a species of peninsula between the Gulfs of Finland and Bothnia, which is completely perforated with ponds and lakes.

Lake Ladoga is the largest basin of fresh water in Europe,

being about 50 leagues in length and 22 in breadth. In winter it is covered with a thick layer of ice, which does not melt until very late, so that often at St. Petersburg, during the warmest and most beautiful days of spring, an island of ice from Lake Ladoga may suddenly be seen majestically descending amidst the fleets of vessels which furrow the waters of the Neva, dragging with it the fragments of a peasant's sledge, or the carcass of a horse which had perished by the cold.

Three other lakes of smaller size discharge their waters into Lake Ladoga; at the east, *Lake Onega*, which is of almost equal extent; at the west, *Lake Saima*; and at the south, *Lake Ilmen*. Others, also, which are but little known, as that of *Bielo*, south-east of Lake Onega, and *Lake Peipus*, south of the Gulf of Finland.

LAKES OF SWEDEN.—As in the Swiss Alps, the lower portion of most of the valleys of Scandinavia (at least on the eastern side) is occupied by the waters of lakes, which take the place of the fiords of the Norwegian coast.

The rivers to which they give birth, or which flow into them, form multitudes of cataracts or falls, some of which are very remarkable.

Among the largest of these lakes should be mentioned the *Maelar*, which communicates with the Baltic, and whose small, fresh, and green islands, and shores covered with gardens, towns, and villages, present during the summer an extremely graceful and smiling spectacle. On an island of this lake, and on the strait which connects it with the Baltic, is built the capital of Sweden — Stockholm.

West of the preceding is *Lake Wener*, one of the largest in Europe. This lake is 30 leagues in length and 16 in breadth. A great number of verdant islands arise from the midst of its waves; and on its banks, intersected by deep bays, are found many towns and numerous villages and hamlets, whose inhabitants are greatly indebted to the beautiful lake which borders them; for they plough it unceasingly (except in winter) with boats laden with merchandise, and these prosecute an abundant fishery of salmon and other fish.

Lake Wetter, east of the preceding, is characterized by this

very singular and inexplicable phenomenon—that it often experiences, in the finest weather, violent agitations.

SECT. 7. RIVERS OF EUROPE.—Rivers are, in the language of another, *moving roads*, or at least natural canals, which serve to place the interior of a continent in communication with the coasts, and, by means of the sea, with the most distant countries. In this point of view, navigable rivers are a precious advantage to every country; and by no continent are they enjoyed to such a degree as by the European.

RIVERS WHICH FLOW INTO THE ARCTIC OCEAN.—The *Petchora*, which takes its rise in the Ural Mountains, is as considerable a body of water as the largest rivers of France; but as it traverses the most deserted plains of Russia, marshes, or icy *tondras*, it has scarcely any commercial importance.

The *Dwina*, (the Double,) which is frozen every year during six or seven months, submerges in the spring a great extent of country, and flows into the White Sea.

RIVERS WHICH FLOW INTO THE BALTIC.—The *Neva*, which receives the waters of Lakes Ladoga, Onega, Saima, and Ilmen, has a course of little extent, but a considerable volume of water. Sometimes the west winds cause the waters of the Gulf of Finland and those of the river to reflow in such a manner as to occasion disastrous inundations in the capital of Russia. In November, 1824, the *Neva* swept away 330 houses, and ruined more than 2000, besides causing the destruction of more than 1500 persons.

This beautiful and broad river is frozen every year during six months. But as soon as the icebergs separate, towards the end of April, opening a passage for boats, cannons fired from the fortress announce this happy event to all the inhabitants. The commander of the city, in full uniform, and attended by all his chief officers, then repairs to the palace in a richly-decorated gondola, bearing a magnificent crystal glass filled with the water of the *Neva*, which he presents to the emperor, who immediately drinks to the prosperity of his capital. This is the most costly glass of water which is drunk on the surface of the globe; for, according to an ancient usage, the emperor returns it full of gold to him who tenders it.

The *Duna*, (or Western *Dwina*,) which issues from a small

lake, and flows into the Gulf of Riga, is obstructed by rocks, which greatly impede the progress of the flat boats with which the peasants of White Russia descend but never ascend the river. This circumstance does not, however, prevent the transportation of the beautiful *Riga pines*, so much in request for the masting of vessels.

The *Niemen*, which rises in vast marshes at the east of Poland, flows into the *Kurische Haff*, a species of liman, or lake of fresh water, of little depth, separated from the sea by a narrow strip of land, which answers the purpose of a natural dike. Often, at the close of winter, the Niemen, encumbered at its mouth by ice, inundates to a great distance the meadows which border its banks, interrupting all communications.

The *Vistula*, which descends from the Carpathians, also flows into a haff, like the Niemen, (the *Frische Haff*.) This important river conveys to the Baltic an enormous quantity of grains and wood, of which Dantzic is the general emporium.

Between the two haffs, and among the sands of the sea shore, the *amber* is principally obtained. This is a resinous substance, of a magnificent yellow color, disseminated in sandy soils, in lumps of greater or less size, and in the interior of which little insects may often be observed, which proves that this substance was originally fluid. Amber is used for manufacturing various kinds of ornaments, which are chiefly valued in the East—small vases, heads of canes, mouthpieces for pipes, necklaces, &c. By friction, this substance becomes eminently electric, and attracts very light bodies; it is also from its primitive name (*electron*) that that of *electricity* is derived.

The *Oder*, which rises at the southern extremity of the Sude-tes, and also flows into a haff, is an inconsiderable river, lacking in summer sufficient water for the requirements of navigation, and which is continually inundating, undermining, and changing its low and sandy banks. Its principal affluent on the right is the *Wartha*.

RIVERS OF THE NORTH SEA.—The *Elbe*, a large and beautiful river, which rises among the Giant Mountains, receives through the *Moldau* all the waters of Bohemia, is increased by those of the *Havel*, (which first bears the name of *Spree*,) its principal

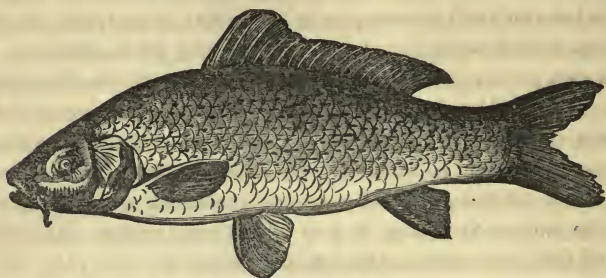
affluent on the right, and flows into the North Sea through a broad mouth near Jutland. This river, and especially its affluents, abound in fish. Among others it produces the *common silure*, one of the largest of fresh water fish, sometimes attaining 100 pounds in weight. As it is heavy in its movements, and with difficulty seizes its prey when swimming, it usually remains motionless, hidden beneath the slime, displaying above the mire the wattles which surround its large mouth, and which resemble worms. Enticed by these appearances, the little fish approach this deceitful bait, and fall into the outstretched mouth of their formidable enemy. The flesh of the *silure* is white and fat, but heavy, and less esteemed than that of the eel.

The *Weser*, west of the Elbe, is a river of little importance, whose great waters annually inundate the marshy plain which it traverses, whereas in summer merchant vessels can scarcely ascend it beyond its mouth.

The *Rhine*, on the contrary, which rises in the Swiss Alps, east of St. Gothard, and flows into the sea between Belgium and Holland, is the first river in Europe, owing to the importance of the communications which it establishes between the centre of the continent and the most commercial and industrial countries in the world. Its navigation is never impeded by the want of water; for whilst the summer exhausts most of the rivers, it causes the Rhine to swell, by dissolving the snow and ice of the Alps. Nevertheless, the upper part of its course is sometimes obstructed by rocks; thus, after issuing from Lake Constance, the Rhine forms, near Schaffhausen, a beautiful fall of 80 feet in height, and of the most imposing aspect. At the foot of this cataract are caught many *salmon*, which vainly endeavor to surmount it. Lower down is found the *carp of the Rhine*, which is especially esteemed, no table being considered well served without it. The scale of the little fish known by the name of *ablet* is the object of a considerable commerce; it is exported into Saxony, France, and Switzerland, where it is employed in imparting to the glass pearl a brilliancy which rivals that of the true pearl of the East.

The Rhine flows into the sea by several mouths. Its principal affluents on the right are the *Neckar* and the *Main*; on the

left, the *Aar*, which receives the largest part of the rivers and lakes of the Swiss plateau, the *Moselle*, which rises in the Vosges,



Carp of the Rhine.

and the *Meuse*, which, issuing from the same regions, mingles its waters with one of the principal branches of the Rhine, which might, however, be considered as a river by itself.

The *Scheldt* is an inconsiderable volume of water, which has, however, acquired a certain importance by facilitating in Belgium the establishment of numerous canals, promoting the commerce of Flanders by opening communications with very distant countries.

RIVERS OF THE ENGLISH CHANNEL.—The *Somme*, a river which traverses turfy but fertile meadows, is only rendered navigable by means of a *canal lateral to the Somme*, which opens communications of inestimable importance to a very industrial country.

The *Seine* descends from the mountains of Cote d'Or, describes a course remarkable for its sinuosities, and flows into the sea by a large mouth. Near the latter may be observed a phenomenon known under the name of *water bar*, and which is occasioned by the circumstance that the rising tide stems the waters of the river, and prevents them from entering the sea. The most important tributaries of the *Seine* are, on the right, the *Aube*, the *Marne*, the *Oise*, increased by the *Aisne*, and, on the left, the *Yonne* and the *Eure*.

RIVERS OF THE ATLANTIC OCEAN.—The *Loire*, which takes its source in the Cevennes, and flows first north and then west,

possesses, in respect to navigation and commerce, less importance than would be inferred from the length of its course.

By the slime which it drifts, it raises its bed from year to year, which has rendered it necessary to establish (for a certain extent) a canal, lateral to the *Loire*, that renders very great services. It is exposed to terrible inundations, to counteract which, great dikes have been constructed, often ineffectual in restraining them. Among other fish which the *Loire* furnishes may be mentioned the *shad*, of the herring family, sometimes attaining the size of three feet. Although usually inhabiting the salt water, it repairs, like the salmon in spring, to milt in the fresh water. The affluents of the *Loire* are, on the left, the *Allier*, the *Cher*, the *Indre*, the *Vienne*, and the *Sevre*; on the right, the *Nievre*, and much beyond the *Mayenne*, increased by the *Sarthe*.

The *Garonne* rises in the *Pyrenees*, runs north-west, and under the name of *Gironde*, flows into the ocean through quite a large mouth. But in consequence of its inability to force with sufficient rapidity through this gulf the waters which it accumulates, this surplus water, arrested by the rising tide, rolls backwards, inundates the banks, and violently tosses ships. This phenomenon, known by the name of *mas-care*, is nothing more or less than a *water bar*. The principal affluents of the *Garonne* are, on the right, the *Tarn*, increased by the *Aveyron*, the *Lot*, and the *Dordogne*; on the left, the *Gers*.

The *Douro*, and the two succeeding, are rivers of the plateau, from which Europe derives little benefit, as they issue from the mountains, and only become navigable towards their mouths. The *Douro*, moreover, flows in deep ravines, through which it has hollowed a passage, and where trees and warm sheltered nooks are found, whilst on the surface of the plateau of Old Castile trees are unable to resist the impetuous winds.

The *Tagus*. — Poets have lauded the happy shores and flowery banks of the *Tagus*; but upon beholding its steep and generally arid borders, its turbulent waters, and reddish mire, one scarce knows how to justify its ancient reputation.

The *Guadiana*, which, like the two preceding, rises in the *Iberian Mountains*, disappears under ground in the plains of *La Mancha*, and reappears at eight leagues distance in the *Oyos* of

Guadiana (*eyes of the Guadiana*) — great waterspouts, which issue, bubbling, from the earth.

The *Guadalquivir*, which irrigates the low plain of Andalusia, likewise enjoys a poetic reputation, seemingly at variance with its turbid waters and flat banks, which are monotonous, marshy, or surrounded by steppes, tenanted by meagre herds of cows. Nevertheless, quite large craft can ascend this river as far as Seville; and this circumstance formerly contributed not a little to the prosperity of the country. In the times of the Moors, 12,000 villages occupied the banks of the Guadalquivir, where scarcely 800 are now to be found.

6. RIVERS OF THE MEDITERRANEAN. — The *Ebro*, which waters the low plain of Arragon, has smiling borders, where trees flourish and multiply, which is seldom the case in Spain. The *Imperial Canal* facilitates commerce and agriculture, and obviates the necessity of following the sinuosities of the river, whose course is in many places obstructed by rocks which have become detached from the adjacent mountains.

The *Rhone*, an impetuous river, often terrible in its inundations, rises in the glaciers of the *Furka*, in Valais, traverses Lake Lemman, from which it escapes clear and rapid, and precipitates itself, between the Jura and the Alps, into a species of gulf, now disencumbered of the rocks with which it was once thickly studded. Arriving in the valley of the Saone, the river is augmented by the placid waters of the river of this name which descends from the Vosges, and is swollen by the Doubs, originally from the Jura. Nearer the sea, the Rhone receives, on the left, the *Iser* and the *Durance* — impetuous rivers, which proceed from the Alps, and the latter of which, especially, obstructs with its sands and slime the mouth of the river, and the coasts of the Gulf of Lyons. The Island of Camargue, between the two branches of the Rhone, is a marshy and unhealthy country, nourishing considerable troops of horses and half wild cattle, and where a few beavers still exist.

The *Arno*, which rises in the Apennines, flows north, then west, feeding numerous canals, of whose waters each landholder avails himself in his turn, during a definite period; whereas the river formerly submerged the greater part of these very lands by

its fatal inundations. The whole *valley of the Arno* is excessively fertile; but the principal occupation consists in the manufacture of the elegant straw hats called *Florence braid*. This material is the product of a very thickly sown wheat, cut before its maturity, and is the object of a special cultivation. Almost all the women, even when walking, braid with admirable skill and rapidity. These hats, the value of which amounts to millions of francs, are almost all sent to Paris, whence they are despatched throughout the world, after being fashioned and trimmed.

The *Tiber*, also issuing from the Apennines, flows, on the contrary, south, and then west, its turbid and yellow waters freighted with such a prodigious quantity of slime, that the harbors, formerly constructed by the Romans at its mouth, are now removed to a great distance. Its enormous and sudden risings are the scourge of the countries which it traverses. It possesses, however, the advantage of being almost always navigable from the sea as far as the city of Rome, but its borders are particularly exposed to the disastrous effects of the *malaria*.

The *Po* takes its rise in the Western Alps, and flowing towards the Adriatic Sea, receives from the Alps a great number of important rivers; the two *Doires*, the *Tessin*, issuing from Lake Maggiore, the *Adda*, which traverses Lake Como, and the *Mincio*, which proceeds from the large and beautiful Lake Garda. The course of the *Po* having been restricted from time immemorial by dikes, it has gradually risen to such a point that the surface of its waters is now higher than the roofs of the houses of Ferrara, one of the last cities which it traverses. Moreover the daily action of the waters of the river accumulate at its mouth deposits of slime, which are incessantly extending the boundaries of the sea. Thus it is that the ancient city of *Adria*, a celebrated port, which gave its name to the Adriatic, is now situated at more than eight leagues from the shore.

The *Adige*, which descends from the Tyrolese Alps, and flows into the Adriatic, not far from the mouth of the *Po*, waters a narrow, but hot, fertile, and extremely picturesque valley.

The *Danube* would be the first river in Europe, if its course were not in many places interrupted by rocks and shallows. It takes its rise in the Black Forest, receives from the Alps

the *Lech*, the *Iser*, and the *Inn*, and opens a passage as far as Vienna, almost impracticable on account of the islets and rocks, which render its navigation so difficult that the rafts which have descended can never ascend it, and are sold for firewood. From Vienna the river enters the plains of Hungary, where it winds among low and sandy islands, and is augmented by the waters of the *Drave* and *Save*, which descend from the Eastern Alps, and of the *Theiss*, which rises in the Carpathians, and of which the Hungarians are wont to say, "*Fish form one third of the Theiss.*"

Issuing from the plains of Hungary, the river is again encumbered and obstructed by rocks which completely arrest steamboats and other vessels. The fall of the river, at the *Iron Gate*, (as this defile is called,) is about 15 feet; it is only ascended in boats, towed with difficulty by men or oxen. Below, the Danube becomes a beautiful and broad river, which proceeds tranquilly across the low plain of Wallachia and Bulgaria, receives the waters of the *Pruth* on the left, and flows into the Black Sea by four mouths, all more or less obstructed by sand, with the exception of a single one, the Soulina; and yet the Russian government is daily more neglectful of this circumstance, which materially interrupts the wheat trade that Wallachia might carry on with the countries of the west by means of the Black Sea.

The Danube abounds in fish, and its banks are frequented by multitudes of birds — snipes, moorfowl, storks, herons, and especially by troops of *pelicans* — great palmipeds, larger than



Pelican.

swans, which are chiefly remarkable for a membranous pouch suspended beneath their bills, and in which they accumulate a stock of fish. Persons have succeeded in taming them, but not in training them for the fishery, as the Chinese train the cormorants. On the borders of the Danube, as in the limans of Southern Russia, it is curious to see a flock of pelicans unite in a circle around a bay of little depth, beating their wings to frighten their prey, and slowly approaching the shore, until the fish, contracted in the smallest possible space, are all captured by their formidable enemies. It has been said that no bird manifests so much tenderness for its young, and it has even been alleged to have torn open its breast to nourish them with its blood; but this is a pure fiction, as ill founded as it is ancient.

The *Dniester*, which rises in the Carpathians, and the *Dnieper*, which has its source near that of the Niemen, and receives from the immense marshes of the Pripetz the famous *Beresina*, are two rivers which greatly resemble each other. Their falls, or rapids, (the Dniester has but one,) forbid their being ascended except at the period of very high flood; the ice obstructs them during 5 or 6 months of the year, and these different circumstances greatly diminish their commercial importance. The banks of the Dniester and Dnieper are covered with reeds, to which the borderers set fire every spring, notwithstanding the stringency of the law which pronounces against the guilty the penalty of banishment to Siberia. They purpose by this conflagration both to obtain new and more abundant growth, and to drive from their hiding places multitudes of wolves, which they immediately kill. The islands which the high waters do not overflow swarm with serpents: they also contain many geese, ducks, and pelicans. The Dniester and the Dnieper both flow into the Black Sea, through a vast *liman*, in which the Dnieper is enlarged by the waters of the *Bug*.

The *Don*, which takes its rise towards the centre of Russia, annually inundates its low plain; but in summer it has not sufficient water for large craft. Its slimy and scarcely potable waters are increased by the Donetz, and encumber the Sea of Azof with their alluvial deposits. It is principally in the vicinity of this watercourse that the Cossacks reside, called the *Cossacks of*

the Don. They cultivate the vine on the borders of the river, and manufacture foaming wines, of which they export more than a million bottles a year. These wines, to a certain extent, take the place of champagne, which is very expensive in the country.

RIVER OF THE CASPIAN SEA. — The *Volga* takes its source at the west of Russia, runs first east, then south-east, and flows into the Caspian Sea by a great number of mouths. In its dimensions this river ranks first in Europe; but as it flows into a lake which has no communication with the ocean, is surrounded by steppes and peopled by nomadic hordes, the *Volga* has not the commercial importance of which its size would otherwise admit. Although the barks which navigate it are numerous, communications are never so active on its borders as in winter, when thousands of sledges thread and traverse it in every direction. Its fisheries are immensely productive; it contains especially (as likewise the Danube, and all the other rivers of Southern Russia) a prodigious quantity of *sturgeons*, those large fish whose eggs are employed in the preparation of caviare, and their bladder in the formation of isinglass.

SECT. 8. ISLANDS OF EUROPE. — **ISLANDS OF THE ARCTIC OCEAN.** — The islands of *Nova Zembla*, north of Russia, are separated from each other by the Strait of Matotshkin, and both completely covered with high mountains. The winter occupies three quarters of the year, and thick night broods over this country during three months. In summer, the snow disappears from the plains in the month of July, and then in the well-sheltered portions charming flowers expand, which scarcely rise above the surface of the soil. The most common tree of *Nova Zembla* is the *willow of the poles*, which rises at most only 6 or 8 inches above the moss, but whose principal stalk runs and creeps to a distance, and furnishes a valuable fuel for seamen. As at a slight depth the soil is perpetually congealed, and as its surface alone imparts warmth, the plants creep along the soil in order to absorb all the heat of the atmosphere. The animals are rats, great numbers of foxes, aquatic birds, many fish, and among others salmon, of excellent quality.

These islands are inhabited only during the summer, by a small number of Russian fishermen.

Spitzbergen, situated at the northern extremity of Europe, is, as its name indicates, (pointed mountain,) an island bristling with high mountains, all of whose valleys are filled with enormous glaciers which extend even to the sea. The summer is of only six weeks' duration, and during the winter the sun remains for four months invisible. And yet vegetable life is not extinct in *Spitzbergen*. It produces no trees, but the willow of the poles covers the ground with the thick network of its small branches; and lichens, mosses, and a few flowering plants clothe the rocks or marshes; the snow itself is covered with microscopic plants, composing what is called *red snow*. But the most precious plant which is found in these desolate regions is the *scurvy grass*, a



Scurvy Grass.

species of cress which flourishes in running water, in the neighborhood of melting snows; this icy water preserves the freshness of its leaves, and the rigor of the climate robs it of a portion of its natural acidity without depriving it of all taste. Thus the sailor eagerly gathers the only edible vegetable afforded by this sterile

soil, at the same time blessing the Providence which has ordained that this salutary plant shall vegetate beneath a sky where the sailor's malady, the scurvy, aggravated by cold and dampness, makes such rapid progress. The animals of Spitzbergen are quite numerous ; they consist of gulls and other sea birds — the eider duck, with its precious down ; whales, and more especially morse, and white bears, those awful tyrants of the polar seas. Spitzbergen is not inhabited ; shipwrecked crews have often passed a winter there, but have had to endure almost intolerable privations and sufferings, and have, for the most part, perished from cold or from the attacks of bears.

ISLANDS OF THE ATLANTIC OCEAN. — The *Loffoden Islands*, on the eastern coast of Norway, form a rocky archipelago, where the harvests rarely have time to ripen, but where Providence compensates for the insufficiency of the crops by very abundant fisheries. Every year more than 3000 boats, each manned by five hands, are employed both with the line and net, in capturing the immense shoals of fish which frequent these coasts. This fishery, which is especially profitable during the winter season, involves terrible fatigues and privations ; but nothing can deter the men of the north. On the sea they are active and happy, while on land they sink into profound apathy. Thus the youth does not consider that he has arrived at manhood until he has spent a winter at Loffoden.

Iceland, a large island situated very far west of the Loffoden Islands, derives its name from the icy mountains which the currents often accumulate in the numerous bays with which its coasts are indented. It is an excessively volcanic country, where subterranean fires produce eruptions, whose ravages are often terrible. Towards the close of the last century, in consequence of one of the most violent which had yet occurred, such great spaces were laid waste that famine and disease swept away, in the course of two years, 1300 men, and 150,000 sheep and horses. Towards the centre there is a fearful desert, covered with lava and ashes, sprinkled with small volcanic cones, while close at hand enormous glaciers descend from the mountains even into the heart of the land, as if conflicting with the empire of fire. Besides *Hecla*, and some others less known, Iceland contains

curious mud volcanoes ; one of which, among others, raises every five minutes an enormous liquid column, as much as 50 feet in height. It is especially noted for its *Geyser*, which throws up, at intervals, powerful jets of boiling water, to a height of 150 feet or more.

Formerly the climate appears to have been less cold, and the island then possessed forests ; it now produces only stunted birches, and the only wood which is found there is the driftwood which the currents float into the fiords of the coast. Potatoes and legumes are but little cultivated, and the Iceland moss, which is mixed with farina or cooked with milk, constitutes the principal harvest of the Icelanders. In addition to this should be mentioned that of the hay, which is of especial importance in this country, as the cows, horses, and sheep (all of small size) are the principal source of the welfare of the inhabitants. If the crop of hay proves scanty, or if the winter is unusually prolonged, they are often obliged, for the preservation of their cattle, to add to the fodder a hash made of fishes' heads. Reindeer, (which they have not attempted to use, as in Lapland,) geese, and wild ducks, among others the eider duck, seals, and principally fish, somewhat atone for the poverty of the soil. The *inhabitants* are no less remarkable than their country. The Icelanders are an educated people, who have preserved the ancient language of Scandinavia, of which they were a colony. They have also very celebrated poems and religious traditions. The island contains no cities, and few villages, but many isolated farms. Like the Danes, upon whom they are politically dependent, the Icelanders are all Protestants.

The *Faroe Islands*, a gloomy and foggy archipelago, situated south-east of Iceland, have received their name from the numerous sheep, which constitute their principal wealth, and are almost to the inhabitants what the reindeer is to Lapland. From them they obtain their sustenance, their clothing, the tallow which serves to illumine their long winter nights, and with the surplus of the wool they procure money for buying various articles which their own country does not furnish. Many of them have flocks of 500 or 600. And yet they are suffered, winter and summer, to wander in the fields, without being gathered into

folds. Neither are the horses the objects of any care. The cows alone, on account of their daily use, enjoy the privilege of eating at a rack. Sea birds afford a considerable resource to the Faronians, but nothing in comparison with the *dolphin fishery*. As soon as a fisherman has discovered in open sea the presence of a shoal of these animals, a signal is immediately given to all the inhabitants of the coast. The fishermen spring into their boats and advance in a semicircle, in such a manner as to enclose the dolphins between the line of boats and some bay. Soon all escape is impossible, and they are killed with blows of clubs. The booty is then divided; one portion is allotted to the king and church, one to the functionaries, a third to the poor, and the fourth to those who have taken part in the fishery. The animals are afterwards cut in pieces, and furnish leather, flesh, and lard, which form the best stores of the Faronians. From the fat of a single dolphin a ton of oil may usually be obtained. The inhabitants, few in number, are also subject to Denmark, and are all Protestants.

South-east of the Faroe are the *Shetlands*, 80 small islands, only half of which are inhabited, and which, as well as the succeeding, form a part of the British Isles. They are mountainous, steep, and arid; the sea incessantly ravages their coasts; the vegetation is composed simply of heath, and the greater part of the soil is marshy. The sheep, small, almost wild, with delicate flesh, yield a very soft wool, particularly adapted to the manufacture of flannel and hose. The most remarkable production of these islands is the *shelties*, or *ponies* — complete miniatures of horses, at most only three feet in height; they are, however, endowed with prodigious strength, in proportion to their size, at the same time that they are very easily maintained, and of perfect docility.

The *Orkneys*, 30 islands, only half of which are inhabited, are situated south-west of the preceding, to which they bear much resemblance. The sea is there also very tempestuous, the soil poor, and the winters long and severe. The fishery of seals and common fish, as likewise the hunt for sea birds' eggs, furnish occupation to a great number of inhabitants.

The *Hebrides*, west of the preceding, foggy, damp, and partly

sterile, are chiefly remarkable for their beautiful colonnades of basalt, (a black volcanic stone,) which one would suppose carved by the hand of man. Their small sheep with soft wool resemble those of the Shetland Islands. The hunt for petrels, and other sea birds, which abound on the rocky shore, is the principal resource of these islands. Suspending themselves over the precipices by a cord, the islanders remove the eggs or the little birds, kill the old ones with a club, and make prizes of all that fall into their hands. Sometimes flocks of these birds darken the air, and at other times the rocks of the shore are literally covered with them.

Great Britain is that important island which in every respect exercises a preponderant influence in the universal progress of nations towards civilization. Its *aspect* is extremely diversified. All the eastern portion forms an undulating plain, intersected with low hills, admirably cultivated, and generally presenting a most luxuriant verdure. The west is occupied by mountains, most of which are of little elevation, but often quite wild and picturesque; at the south-west, the *Mountains of Cornwall*, in the peninsula of this name, are little more than high hills, celebrated from the most remote antiquity for their rich *tin* mines, some of which penetrate much below the level of the sea; from these districts enormous quantities of *copper* and *kaolin* are also obtained. Farther north, the *Mountains of Wales*, with rugged sides and steep and foggy summits, are rich in their inexhaustible deposits of *pit coal*, always accompanied by abundant mines of *iron*, of medium quality. The *Peaks*, or *Pics*, north-east of the preceding, are wild and gloomy mountains, and contain rich deposits of *lead*, the most considerable in Europe next to those of Sierra Nevada. The *Cumberland Mountains*, at the north-west, are renowned for their beautiful valleys, cascades, and small lakes, presenting the aspect of an *English Switzerland*; mines of excellent *plumbago* are there worked, to which the English pencils owe their superiority. The *Cheviot Hills*, farther north, extend from one sea to the other, and separate England, properly so called, from Scotland; these cold and uncultivated highlands have given their name to a race of sheep, with thick and short fleece, which pass the whole winter exposed

to the inclemency of the air, and are never sheltered in folds. The *Grampian Hills*, extending from south-west to north-east, produce also the *black-headed* or *heath sheep*, for which the Scotch are endeavoring to substitute the preceding, that is smaller, but whose meat is juicy and preferred in Scotland to any other. At the north-west, and in the same direction as the foregoing, from which they are separated by a line of picturesque lakes, and by the Caledonian Canal, are found the *Scotch Mountains*, which are of a still colder, wilder, and more gloomy character, but which attract many hunters in summer, on account of the abundance of their game.

The *climate* of Great Britain is not unhealthy, but it is very uninviting. Its fogs and rains are proverbial ; its extreme dampness is unfavorable to wheat, but is admirably adapted to grass and roots ; thus its fresh meadows and velvety lawns possess a verdure elsewhere unparalleled. Its rainy summers, prolonged autumns, and very mild winters always preserve an agreeable vegetation. Upper Scotland alone (at the north-west) has long and severe winters.

Minerals. — No country in the world contains such rich mines of *pit coal* and *iron*, those two essential implements of modern industry ; the *copper* mines of Cornwall are the first in the world after those of Japan ; the *tin* mines rank next to those of the Island of Banca ; those of *lead* next those of the south of Spain ; finally, those of *plumbago* take precedence of all others. And, in order to facilitate the transportation of these heavy substances, as also that of all other merchandise, the English are favored by the deep gulfs which indent their coasts, and by the existence of numerous rivers, the *Thames*, the *Humber*, and the *Severn*, all eminently navigable, and which have enabled them to establish canals in every direction, to say nothing of the facilities they have enjoyed for constructing innumerable railroads, in a country where the principal materials that these roads require are obtained at so low a rate.

Vegetables. — We have already spoken of the force and freshness of vegetation in England. The soil of this country is naturally, however, of but little fertility. Nearly all the mountainous portion is composed of cold, unfruitful, and sterile land ;

this is the case with the granite hills of Cornwall, with the mountains of Wales, and especially of Upper Scotland, one of the most harsh and unfertile regions of Europe. Even in the plain, heaths, marshes, and chalky hills form the greater part of the soil; but English agriculture has succeeded in overcoming all these obstacles, and has acquired an indisputable superiority over that of all other countries. In the plain, especially, where cereals predominate, (for in the western portions, which are more damp and rainy, the cultivation of herbage is most important,) wonders have been effected in reference to the amelioration of the soil. By means of *drainage*, that is, by establishing under the soil earthen pipes, suitable for facilitating the draining of the water, meadows and fields have, within ten years, been redeemed, the health of the inhabitants has been benefited, and the fogs have become less thick and heavy.

The principal productions, in the eyes of the English, are the grass of their natural meadows, and that of the plants which compose their artificial fodder; the *trefoil*, (the *ray grass* of Italy,) which may be cut as many as eight times, and the *radishes* or *turnips of Sweden*, so suitable for feeding and fattening cattle. They have become aware that by ameliorating and augmenting their fodder, they would increase their stock of cattle and manure, and that this would be the surest means of enhancing their produce in wheat. Thus nothing presents a more beautiful or smiling spectacle than the meadows of England—its greenswards covered with cattle grazing at random, without keepers, and only confined by the quickset hedges, which enclose every estate. The principal vegetables are wheat and the potato; barley, of which an enormous consumption is made for beer; oats, which thrive every where, but especially in Scotland, where oatmeal gruel is the national dish; hops, and a little flax. The English eat few fruits and vegetables, because both are with them almost tasteless.

Animals.—The most striking features of English agriculture, in this respect, are the number and quality of its *sheep*. Having discovered that of all animals this is the most easily maintained, and the one which yields the hottest and most active manure, the agriculturists have found it for their interest to raise many

sheep. Without being solicitous, as is the case on the continent, to procure from their flocks fine wool, which can be furnished them at low prices by their colonies of the Cape, or of Australia, it has been the chief object of the English to improve the flesh of their sheep; and they have succeeded in obtaining the largest species, which acquire their full development in two years, instead of requiring four, and it has immediately doubled the revenue from their sheepfolds.

Analogous improvements have been effected with the bovine race. Thus the *short-horned Durham oxen*, which are beginning to be diffused abroad, become fattened at the age of two years, and attain an enormous bulk; the cows have also been ameliorated, and yield a greater proportion of milk. In order to accomplish this, it has been found necessary to exonerate both oxen and cows from the toilsome labors that are imposed upon them on the continent, and which are performed in England by horses, and within a few years, in many cases, by steam engines. As regards *horses*, the superiority of the English breeds has long been acknowledged. It is well known that the admiration for race horses is a national passion in this country; saddle horses are no less appreciated, and command high prices; the dray or cart horses are excellent. *Hogs* are also more numerous, better cared for, and killed younger than in most other countries. On the other hand, the English raise very little poultry, which they are obliged to obtain, for the most part, from the continent, as likewise eggs, which France exports to them every year, to the amount of at least one million of dollars.

The wild animals are few in number. Wolves no longer exist in the island; but the fox gives rise to a chase very captivating to the English nobility. The latter often surround their houses with vast parks, in which they raise many varieties of game. Thus (principally in Scotland) there exist in certain forests herds of *Scotch stags*, or red deer, which sometimes number thousands of heads. But the most habitual object of pursuit in the mountains of Upper Scotland is that of the different varieties of the *woodcock* tribe—the *fork-tailed woodcock*, which prefers the woods and damp valleys, the *heathcock*, which frequents the great barren mountain tracts, and the *lagopus ptarmigan*, which

is only content on the summit of the highest mountains, among the snows, whose hue its plumage every winter assumes. One va-



The Fork-tailed Woodcock.

riety of the lagopus, wholly peculiar to Scotland, is the *grouse*, whose flesh, which exhales a strong odor of venison, is highly appreciated by hunters. This is the most celebrated game of the Highlands, and its hoarse and sonorous cry is said to strike to the heart of every true Scotchman.

Population.—The majority of the inhabitants of the island are Anglo-Saxons; that is to say, belong to the Germanic race. In Wales, and in the mountains of Upper Scotland, the ancient Celtic race has preserved its language and its individuality. The English are generally tall in stature, have regular features, and a calm, grave, and cold physiognomy. Endowed with an independent character and great energy of will, they are essentially practical and independent men. They possess neither the depth of thought of the Germans nor the intellectual universality which characterizes the French. The damp, cloudy, and heavy air, in the midst of which they live, often disposes them to melancholy and spleen; but they have a deep love of nature, and appreciate most highly the beauties which are lavished less freely upon them than upon some other nations. The English are unsociable; they nevertheless evince a strong attachment to their country, of which they are very proud, and domestic life is extremely revered and powerful among them. Laws and customs are also astonishingly observed in this land of liberty; thus the titles and rank are

always the inheritance of the eldest son, which explains how the colossal fortunes of the English aristocracy may descend from generation to generation without becoming impaired or divided. All the members of the upper nobility bear the title of *lords*; the well-educated and wealthy citizens receive that of *gentlemen*. Education is tolerably good in England, and excellent in Scotland; industry prodigious, and commerce universal. The Protestant religion is that of an immense majority of the English and Scotch, and no nation makes such considerable sacrifices for the propagation of the gospel into all the countries of the world.

IRELAND. — West of Great Britain is *Ireland*, a large island, three quarters of which nearly equals England in natural fertility, whereas the north-west (Connaught) resembles the most unprepossessing portions of Wales and Upper Scotland. The scourge of Ireland is the dampness, which is still greater than that of England. Vast miry swamps (*bogs*) cover at least a tenth part of its surface. These marshes furnish an abundant quantity of turf, the ordinary fuel of the inhabitants. The aspect of the Irish plains is generally monotonous and gloomy; however, the counties of the centre, and especially the valley of the principal river, the *Shannon*, are clothed with a perpetual verdure, no less beautiful than that of the plains of England. The productions are especially the *potato*, which constitutes almost the only food of the poorest portion of the population; *flax*, the cultivation of which has greatly increased within a few years, especially in the north-east, (Ulster;) *oats*, which are used for bread in the above-mentioned province; *hemp* and *wheat*, almost all of which is exported to England. Horned cattle and hogs are very abundant; thus it is principally from Ireland that the English navy obtains its salted meat, its grease and butter. The majority of the population are of the Celtic race, and speak the *Erse* language, a dialect similar to that of Upper Scotland; the other inhabitants are English and Scotch. The Irish, properly so called, are generally Catholics — ignorant, superstitious, extremely indolent, and very much addicted to whiskey. Their poverty exceeds any thing to be met with elsewhere; they have, for the most part, no occupation, and their narrow mud cabins serve at the same time for the abode of the family and as a stable for the cattle. Excess of misery has

compelled them within a few years to emigrate in crowds, in order to gain a subsistence in England, or to establish themselves in remote countries, whence they never return.

Between Great Britain and Ireland are found the *Isle of Man*, noted for its argentiferous lead mines, and the Island of *Anglesea*, destitute of trees and hedges, but rich in copper, cattle, and wheat, and which is now connected with the principality of Wales, both by a gigantic wire suspension bridge and by the famous *tubular self-sustaining bridge*, which is crossed by railway trains.

Near the southern coasts of England is situated the beautiful *Isle of Wight*, whose soil is so fertile that it is said to produce seven times as much wheat as its inhabitants consume. It is thence chiefly that the English obtain an excellent *pipe clay*, of which they manufacture their famous pottery ware, so remarkably cheap and of very elegant form.

ISLANDS OF THE BRITISH CHANNEL, OR ANGLO-NORMAN ISLANDS: JERSEY, GUERNSEY, ALDERNEY.—The first is a country in which the property is extremely divided, but the land is every where cultivated like a garden, and yields abundant revenues. The soil was originally poor, but by careful labor has been rendered productive. There is something charming in the aspect of this island, presenting, so to speak, a forest of fruit trees, interspersed with meadows and small cultivated fields, with great numbers of elegant dwellings, ornamented with vines, myrtles, and roses. *Guernsey* furnishes *emery*, a species of iron ore, suitable for polishing steel. The little *Island of Alderney* is celebrated for its fine cows, which are sought throughout England on account of the superiority of their milk. Great precautions are taken for maintaining the purity of this breed.

ISLANDS OF THE BALTIC SEA.—We first discover in this sea the group of the Danish isles, *Seeland* and *Funen*, between the straits, *Laaland*, *Falster*, and much farther east, *Bonnholm*. All are fertile and well cultivated. The grain crops there exceed the necessities of consumption. *Laaland* and *Falster* produce wheat; *Seeland*, barley; *Bonnholm*, oats; and *Funen*, hops. The cherry, plum, pear, and particularly the apple tree, yield the inhabitants abundant harvests, a portion of which they export into Norway and Russia. The meadows are as fresh and green as

those of England; many cattle and horses are raised there. These smiling islands are the richest, most civilized, and most important portion of the kingdom of Denmark.

Rugen, south-east of *Bonnholm*, is a considerable tract of land, with extremely indented coasts and a fertile soil, which attracts strangers by the beauty of its sites, its sea baths, and its Germanic antiquities. Its geese, renowned for their size, furnish commerce with very excellent quills.

The Swedish *Islands* of *Oland* and *Gottland* are fertile and well-cultivated countries, whose climate is milder than that of the neighboring coasts, but which merit no particular attention. The same may be said of the *Islands* of *Dago* and *Oesel*, found at the entrance of the Gulf of Riga, and of those of *Aland*, situated at the mouth of the Gulf of Bothnia. Their coasts, however, furnish abundant fisheries, and are frequented by many sea birds.

ISLANDS OF THE MEDITERRANEAN.—The *Balearic Isles*, east of Spain, naturally partake of the climate and productions of this latter country. The drought is the scourge most to be dreaded there. These islands, the principal of which are *Majorca*, *Minorca*, and *Iviça*, produce oranges as celebrated as those of Portugal, olives, figs, lemons, silk, excellent wines, and honey almost as famed as that of Mount Hymettus. The animals afford nothing worthy of observation, and the motives seem insufficient which induced the ancients to bestow the name of these islands upon one of the two species of the *crane*, or *anthroporides* genus, (comprising the *Numidian crane*, and the *crowned crane*, or *crane of the Balearics*.) These birds, common in the north of Africa, in the islands of the Mediterranean, and on the borders of the Black Sea, are celebrated for their migrations, during which they fly in numerous bands, in two triangular lines, or forming various letters of the alphabet. The cranes have always attracted attention from their singular motions and grotesque salutations, or, in other words, from their pantomimic performances, which have won for them the epithet of comedians.

Corsica, east of the Balearics, is a large and celebrated island, of a picturesque and wild aspect, very mountainous in the centre, and containing a few small plains on the coasts. The climate is healthy in the interior, but exposed to pernicious fevers in the

somewhat marshy plains of the east. This island is not deficient in minerals, the most curious of which is the *amianthus*, or as-



The Crane.

bestos, that incombustible stone, from the fibres of which the ancients made cloth suitable for enveloping the dead, whom they delivered to the flames, and which prevented the ashes from mingling with those of the funeral pile, thus enabling them subsequently to collect them in funereal urns. The vegetation is rich and vigorous, including most of the fruit trees of the warm climes — oranges, lemons, olives, mulberries, and the vine; the walnut and chestnut trees acquire considerable dimensions, especially the latter, whose fruits nourish a portion of the population, and are used in the manufacture of bread, which the peasants are often obliged to crush between two stones before soaking it in their milk. The forests of the interior are magnificent; there, for example, is found the *Corsica pine*, (*pinus altissima*), the highest of the trees of Europe, with hard and elastic wood, eminently qualified for navy purposes. The vegetation of this island

is characterized by its *maquir*, a species of dense copse, from 3 to 12 feet high, composed of arbutue trees, of vigorous myrtles and heath, the ordinary refuge of bandits and fugitives pursued by the law.

We must not omit the *Corsica moss*, which grows on the coast, and which is frequently employed as a vermifuge. In order to disguise its disagreeable odor, this moss is usually mixed with jellies, or introduced into the composition of certain biscuit. The



The Mufflon.

only remarkable animal is the *mufflon*, which inhabits the summits of the mountains, where it may be seen skipping from rock to rock, with a fleetness which would render pursuit unavailing, if it did not occasionally pause to observe the movements of the hunter.

The *Island of Elba*, north-east of the preceding, and noted as the place of Napoleon's brief residence in 1814, contains very abundant iron mines.

The *Island of Sardinia*, south of Corsica, from which it is separated by the Strait of Bonifacio, bears much resemblance to the latter, possessing, for the most part, the same climate and productions. Forests of orange trees are found in Sardinia, of which one alone — that of Milis — contains more than 500,000 trees. In the spring the ground is covered with a thick layer of orange blossoms, which diffuse their balmy odor to a distance. One of these trees, under which King Charles Albert reposed in 1829, and which has received the appellation of the *King of Orange Trees*, has the bearing as well as the majesty of the oak, and a man cannot compass its trunk with his arms; some of the largest have yielded as many as 5000 of the fruit in one season. As in Corsica, an enormous quantity of chestnuts are consumed, and acorns are used in the composition of bread. These fruits being stripped of their bark, and robbed of their bitterness, by means of a lye of ashes, are pulverized and cooked in the oven; and this pulp, after hardening, may be kept several months. Among the animals there encountered are the mufﬂon, the wild boar, the deer, &c. But the most curious objects are the *ﬂamingoes*, which, in autumn, arrive in innumerable troops, and, like *clouds of ﬂame*, alight on the borders of ponds, where they remain until the month of March. They are very difficult to capture, for they intelligently establish sentinels at various outposts, which forewarn them by a cry of the approach of man.

Sicily, a large and beautiful island, south of the preceding, is separated from Italy by the *Strait of Messina*, where, in summer, by an optical illusion, or mirage, the image of the neighboring coast is sometimes seen reﬂected. This vision, says the popular legend, may be attributed to the fairy Morgana, who seeks to deceive sailors in order to lure them to destruction. This island is extremely fertile, but agriculture is much neglected there; scarcely a quarter part of the soil is cultivated, and it is capable of maintaining five times the number of its present inhabitants. The climate is very hot, the productions those of Southern Italy. Wheat always succeeds admirably, and gives rise to the principal

commerce of the country; it is preserved by means of pits excavated in the rock; the olive tree attains a larger growth than in the other portions of Italy; the cactus, whose fruit, in the form of a fig, constitutes the food of the indigenous class, borders all the footpaths; the watermelon, with its refreshing juice, acquires an exquisite flavor; the fruits of the date tree arrive at maturity; the sugar cane has succeeded, but its cultivation is abandoned; the vines of Marsala produce celebrated wines. On the other hand, Sicily contains mines of considerable importance; the principal are those of *sulphur*, from which England alone annually obtains 500,000 quintals. But the great wonder of Sicily is *Mount Etna*, a terrible volcano, whose lava covers forty leagues of soil, which is very fertile, and occupied by numerous villages, the only ones in the island. The ascent to its peak, 10,874 feet elevation above the sea, is somewhat difficult; but with a clear atmosphere one can thence descry not only Calabria and the adjacent islands, but also the remote coasts of Africa: this is a magnificent spectacle.

The *Lipari Islands*, north of Sicily, present several volcanoes, one of which, that of the *Island of Stromboli*, is constantly in motion. Lipari supplies all Europe with pumice stone—that volcanic, white, porous, and light substance which is used in preparing many metals for receiving a polish, and also for smoothing the surface of wood, parchment, and even that of the human skin. Reduced to powder, the pumice, known under the name of *poz-zolana*, serves to form, mixed with lime, a cement which acquires a great durability in water.

Malta, south of Sicily, an island extremely celebrated in history, and a strong military position, is, so to speak, only a rock covered with a thin layer of earth, retained by walls, and for the most part brought from Sicily. It is famed for its oranges, the beauty of its roses, and its delicious honey. The small adjacent *Island of Comino* owes its name to the quantity of cumin which is cultivated there; *Gozzo* is fertile in cotton, grain, and potherbs.

The *Ionian Islands*, situated on the western coast of the Hellenic peninsula, (*Corfu*, *Paxo*, *Santa Maura*, *Theaki*, *Cephalonia*, *Zante*, and *Cerigo*,) possess the climate and productions of Ca-

labria and the Morea. The chief exports are dried currants, figs, and olive oil.

Candia, a considerable body of land south-east of the Morea, is one of the most beautiful and fertile islands of the Mediterranean, but it is very mountainous. One of its principal productions is the *tragacanth gum*, which is obtained by incision from a shrub of Mount Ida ; it is used in medicine, and in the arts.

The *Cyclades* (ranged in a circle around Delos) comprise numerous islands, the principal of which are *Santorin*, often convulsed by earthquakes, and thickly sprinkled with pumice stones ; *Melos*, which produces a much esteemed alum ; *Kimolo*, or *Argentiera*, which furnishes *cimolite*, a species of clay employed in medicine ; in the centre, *Naxos*, the largest of the Cyclades, and which contains emery mines ; *Paros*, celebrated for its famous marbles, and *Antiparos*, with its caverns and curious stalactites ; farther north, the important *Island of Syra* ; *Tenos*, rich in its wines, and the most verdant of all ; and *Andro*, which is also very fertile.

Negropont is the largest island of Greece, from which it is only separated by a canal so narrow that a bridge has been constructed across it. It possesses, moreover, the climate and productions of that country.

CHAPTER IX.

THE CONTINENT OF AMERICA.

SECTION 1. EXTENT AND GENERAL FEATURES. — America is a double continent, whose two divisions, of triangular form, are united by the narrow isthmus of *Panama*, only 50 miles in width, and across which a railroad has recently been constructed, by means of which it may be traversed in four hours.

This continent, also called the *New World*, because it has only been known to the inhabitants of the Old World within 362 years, derives its name, not from the illustrious *Christopher Columbus*, the Genoese navigator, who, in the service of Spain, discovered the first portions in 1492, but from a Florentine voyager, *Americus Vespucius*, who visited it five years later, and boasted in Europe of having discovered the first terra firma, so called. In the ninth and tenth centuries, Scandinavians had, it is true, passed from Iceland into the adjacent countries of America, (Greenland and Labrador;) but their establishments had acquired little importance, and were unknown to the people of Western Europe.

North America possesses a certain number of important peninsulas, and is intersected by numerous inland seas, bays, and gulfs.

South America, on the contrary, contains no peninsula, and its coasts are as uniform as those of Africa. But a considerable advantage enjoyed by both over the African continent, is that of possessing immense rivers, navigable for the whole extent of their course, and by means of which even the most central regions may be put in habitual and easy communication with all the rest of the world. The currents and trade winds wonderfully facilitate communications by sea with the Old World, as we shall soon perceive.

We have already spoken in a general manner of the seas which serve as boundaries to America. It only remains for us to

describe the principal bays, or internal seas, which impart to the American continent its peculiar form.

SECT. 2. BAYS OF AMERICA. HUDSON'S BAY. — An arm of the North Atlantic, projecting into the interior of British America, forms the vast *Hudson's Bay*, whose coasts are generally elevated and bordered with rocks. This bay receives rivers of the first rank, which with their tributaries establish a chain of communications throughout the country. In a climate which equals that of Siberia in rigor, these innumerable natural roads lose almost all their utility. The ice which the winds and polar currents drive into the middle of the bay accumulates in immense masses, and interrupts navigation even during the months of July and August. On land are to be seen only desolate solitudes furrowed at their base with fearful abysses, bristling at their summits with sharp peaks, crowned with eternal snows. During eight months winter reigns absolutely in these gloomy regions, and such is its severity that ink congeals by the side of a red hot stove, and every thing is frosted with a thick layer of snow, which acquires the consistency and polish of marble. Numerous islands rise from the bosom of the waters of Hudson's Bay, but they are unimportant.*

GULF OF ST. LAWRENCE. — This gulf, situated at the north-east of North America, at the mouth of one of the most considerable rivers of this portion of the continent, is a sombre and gloomy sea, covered with almost perpetual fogs. Nevertheless this is one of the most frequented quarters in the world, on account of the extraordinary abundance of the *cod*, in which fishery at least 3000 ships, manned by 40,000 or 50,000 English, French, or American sailors, are annually employed. Only the smallest portion of these innumerable fish are taken in the Gulf of St. Lawrence; but the immense majority of the cod are transported to the coasts of Newfoundland, and the other small islands of this gulf, to be salted and receive the other preparation which they require before being ready for market.

It is on the *Grand Bank of Newfoundland*, south-east of this

* A northern passage has recently been discovered, which enables the Atlantic to communicate with the Arctic Ocean; but the latter being always frozen, it is unavailable to commerce.

island, that the most important fisheries are carried on. This shoal, which is 700 miles in length and of a variable breadth, is only covered with from 100 to 200 feet of water, whose temperature, milder than that of the neighboring seas, attracts the cod, especially at the period of depositing their eggs. This fish, from 2 to 3 feet long, and from 10 to 20 pounds in weight, usually lives in the depths of the ocean. Its fecundity is prodigious, for as many as 9,000,000 eggs have been found in the body of a single one of them. When first taken out of the water it is called *fresh cod*; salted without being dried, (which is the practice on the Grand Bank, when far from the main land,) it is entitled *green cod*; salted and dried, *dry cod*; dried without being salted, *stock fish*.

In April, May, and June, the fishery is particularly profitable; however, it is usually prolonged until August or September. Each fisherman, as soon as he arrives upon the bank of Newfoundland, or in the Gulf of St. Lawrence, establishes himself, warmly clothed, in a tun, lashed alongside the vessel, holding in his hand his long line furnished with different baits. As soon as a fish is captured, he roots out its tongue, by which means he is enabled at the end of the day to ascertain the exact number of his prizes; he then passes the cod to his comrades on board, whose business it is to cut off the head and remove the liver, from which they subsequently extract the celebrated *cod liver oil*, within a few years much employed in medicine, for invigorating feeble constitutions. Afterwards the cod must be *dressed*, that is, opened entirely, the bone removed, and the fish thoroughly cleansed. It is then thrown between decks, where it is packed with alternate layers of salt; when well drained, it is salted anew and placed in casks. To obtain the *dry cod*, the fish are spread for several days in succession on the strand, in order to subject them to the action of the sun, and are carefully collected at night. After being thus exposed to the sun for five days, they are disposed in heaps until suitably dried. The cod thus prepared is less delicate, but it has the advantage of being more easily preserved, and may be transported into hot countries. The stock fish is prepared by suspending it over the fire and drying it speedily by the action of smoke. The cod fishery not only yields important revenues to the nations

engaged in it, but is also, on account of the dangers which it presents, an excellent school of discipline for sailors. Thus the governments of America and Europe have always bestowed the greatest encouragement upon these remote expeditions.

GULF OF MEXICO.—The Atlantic Ocean, penetrating into the land at the south-east of North America, forms a vast inland sea, known by the name of the *Gulf of Mexico*. Of all the seas of the torrid zone, this is the most subject to tempests, thunder storms, waterspouts, *tornadoes* or *whirlwinds*, and also to stifling calms. As soon as the winds of the north-west, called *los nortes*, begin to blow, they render the coasts almost inaccessible during several months, from the autumnal equinox until the season of spring.

These coasts are generally low, bordered with lagoons and sand banks, destitute of good ports, and exposed to dangerous fevers. This is the primitive country of the *yellow fever*, as Lower Egypt was for a long time the seat of the plague. This terrible malady, which bears in these countries the lugubrious name of *black vomit*, (*vomito negro*), is especially fatal to strangers. Sometimes the passing traveller is struck by it as with an invisible ball. Coming direct from the mountains of the interior, (a region inaccessible to the yellow fever,) he may traverse the Mexican port of Vera Cruz in a sedan chair, embark immediately on board ship, and, shot on the wing, as it were, die on the open ocean.

Nowhere are *sea tortoises* so abundant as on the islands and coasts of the Gulf of Mexico. The inhabitants are said to be adepts in the art of entrapping them, and make great consumption of their flesh and eggs. A great quantity of remarkable shell fish are also procured in these regions, one of which, among others, on the coasts of Mexico, furnishes a dye similar to the *purple* of the ancients. The thread or piece of cloth destined to receive this dye is carried into the sea, and the shell fish being torn from the rock, the tint is immediately applied. This color at first appears green, but by exposure to the sun becomes purple or violet.

CARIBBEAN SEA.—This sea, situated south of the preceding, derives its name from the most ancient population of the

islands, the wild Caribs. It is convulsed from time to time by gales of wind, and the terrible *hurricanes of the Antilles*; but in ordinary weather its waters are so tranquil, and of such a transparency, that the coral and fish can be discovered at sixty fathoms depth; vessels seem to soar in the air, and a kind of vertigo seizes the voyager, whose eye penetrates through the limpid fluid into the midst of these submarine gardens, where shells and goldfish glitter among tufts of fucus and thickets of sea weed.

The *Channel of Yucatan*, by which this sea communicates with the Gulf of Mexico, presents on its two banks the curious phenomenon of springs of fresh water, bubbling up from the bosom of the briny waves. They rise with such force, two or three miles from the shore, that the approach to these singular places is dangerous for small craft. Coasting vessels sometimes come thither to obtain from the midst of the sea a supply of fresh water, whose quality improves with its depth.

The most remarkable phenomenon of these regions is the famous current known by the name of the *Gulf Stream*, of which we have previously made mention. It may be considered as the effect of the trade winds, and of a gentle but universal movement, which, within the tropics, bears the waters of the Atlantic from east to west, towards the shore of the American continent. This uniform movement does not materially agitate the waters of the ocean from the Canary Islands to the north-eastern coast of South America, which are of such perfect tranquillity that a ship's boat might safely traverse this space, to which the Spaniards have given the name of *Sea of the Ladies*. But although tranquil, this movement is none the less strong; it accelerates the progress of ships which are bound from the Canaries to America, while it renders the crossing in a direct line from west to east, along the coast of South America, more difficult.

This current, which the American continent intercepts in its progress, first directs its course towards the north-west, skirting the *Bays of Mosquito and Honduras*, penetrates into the Gulf of Mexico, winds with all the sinuosities of the coasts, where it contributes, more than any other cause, to the accumulation of the sand, and escapes from the gulf, on the east, through the

Florida Pass; forming, as it were, a vast river of warm water, of about fifteen leagues in width, and a rapidity of from two to five miles an hour. It may easily be distinguished from the surrounding sea, not only by its higher temperature, but also by the deep-blue color of its waters, and by their exceeding saltness.

Issuing from the Florida Pass, the current first follows the coast of America, but soon recedes from it in a north-easterly direction, considerably diminishing both in heat and velocity, and widening to such a degree as to stretch from the Bank of Newfoundland on one side to the Azores on the other. It divides into many branches, some of which lose themselves on the north-west coasts of Europe, others in the Mediterranean, while others, following the coasts of Africa, again reënter the great equatorial current, to recommence that immense voyage which it requires no less than three years and a half to accomplish.

The influence of this current is much greater than is commonly supposed. It thence results that the passage from Europe to the United States, in which vessels sail against the Gulf Stream, is obviously longer than the return, when the current favors their progress. These warm waters, transported into the northern seas, sensibly temper the cold on the Bank of Newfoundland: thus is partly explained the difference which in equal latitudes is observable between the climate of North America and that of Europe. The latter, whose prevailing winds, proceeding from the west, are tempered by the warm waters of the Gulf Stream, enjoys so partial a climate that barley is cultivated even in the environs of the North Cape, (Norway,) while American countries, situated in the same latitude as England, are subject to cold so severe as to render them sterile.

GULF OF CALIFORNIA.—This sea somewhat resembles the Adriatic. Penetrating deeply into the land towards the middle of the western coasts of North America, it is sometimes called *Vermilion* (or red) *Sea*, both from the tint communicated to the water in the rainy season, by the rivers which empty into it after traversing ferruginous soils, and from the magnificent purple color which its waves ordinarily assume at the rising and setting of the sun.

The two coasts of this sea are very low, and replete with salt

marshes, swarming with reptiles and insects. Their aspect is generally gloomy and barren. The *pearl fishery*, which possessed great importance towards the close of the last century, has now dwindled to insignificance. It then occupied 700 or 800 divers, who realized considerable profits; but the Indians, who were usually employed in it, finally refused to engage in an occupation in which many of them were annually devoured by sharks, and by a species of monstrous ray, nearly twelve feet in length.

SECT. 3. PENINSULAS OF AMERICA. LABRADOR. — Between Hudson's Bay, the Atlantic Ocean, and the Gulf of St. Lawrence extends a large triangular peninsula, similar in shape to Arabia reversed. It is that of *Labrador*, so called through the strange delusion of a Portuguese navigator, who very erroneously imagined that it offered great advantages for agriculture.

This country presents a most gloomy aspect. So far as it is known, it is a mass of rocks and mountains, intersected by numerous rivers and lakes. All its summits are constantly crowned with snow. The country beyond the coasts acquires a less desolate aspect, producing some forests and verdure, and a tolerable supply of grass for animals.

Climate. — Under the influence of the perpetual fogs which veil the neighboring seas, Labrador is a much colder country than might reasonably be expected from its latitude. The winter, which lasts at least eight months, is one of extreme severity; the lakes are covered with a crust of ice twelve feet in thickness. Notwithstanding the enormous iron stoves which the missionaries have imported from Europe, and the great heaters placed in the middle of the rooms, water is often found frozen, in the morning, in the immediate vicinity of the stove; the cold frequently stops the pendulums, and the coverlets of beds become stiffened with the frozen breath. If, during the day, the wind happens to blow with especial violence, the cold is still more intense. Even in summer it is scarcely warm, and the missionaries have extreme difficulty in raising a few vegetables. In the middle of April the seed is sown in boxes, which are kept within doors. When the plants have sprouted, they are transferred to larger boxes, and placed before those windows which are exposed to the sun. Towards the end of June they are transplanted into the open

ground, but the nights are still so cold that their growth is very slow. These vegetables do not arrive at their maturity until July and August, and are very inferior to ours. The potato, for example, rarely blossoms there.

Vegetables. — It is thence easy to infer how poor must be the vegetation of such a country. In the southern part are found forests of firs, larches, birches, and poplars; farther north, the trees give place to stunted shrubs, which disappear in their turn towards the 60th degree of latitude. For enriching their gardens, the few Europeans established in these countries make use of the sea weed which the waves cast upon the shore during the heaviest storms. The natives collect it also, but with them it is an article of food. It is astonishing to see them eat, with the greatest relish, this perfectly raw, moist weed, in the crude state in which the waves have deposited it. Truly, for this one must have the stomach of an Esquimaux.

The *animals* in Labrador, as in all the frigid countries of both hemispheres, constitute the principal resource of the inhabitants. Those of the eastern coast depend almost entirely upon the *seals*, or *marine calves*, which they kill in great numbers in autumn, when these animals return from the more northern seas. If the seals disappoint them, or appear in diminished numbers, cruel famines ensue, which cause the terrible privations of the long winter to be still more keenly felt. The chase of ducks, which furnish the eider down, and of foxes, which are commonly taken in traps, in such a manner as not to damage their beautiful fur, is also a small source of profit to the inhabitants. In the interior of the country they hunt reindeer, otters, beavers, hares, foxes, bears, (black and white,) wild cats, (terrible destroyers of game,) and *carcajous*, or *gluttons of Labrador*, a species of American badger, which subsist on fruits and small animals, and dig deep and sinuous burrows, from which they are often ousted by the foxes. In the mountains, the *ptarmigan* is also pursued: this is a bird of the grouse species, whose varying plumage, blending in summer with the lichen and moss which cover the rocks beneath which it seeks shelter, bleaches in proportion as the season advances, and in winter assumes almost the hue of the snow which surrounds it. Thus these fowls are not easily captured, although

they furnish an excellent food. They are generally seized by the *neck*, and may be preserved frozen for a great length of time.

The *population* is composed principally of *Esquimaux*; men of small stature and a yellow skin, who evidently belong to the Mongolian race. They have a flat face, short nose, thick lips, large and flexible ears, stiff black hair, and very small hands and feet. They feast on the flesh of seals, and regale themselves on the oil of fish. Such a passion for tallow and greasy substances astonishes and disgusts us; but a very reasonable, natural instinct seems to serve as a guide to the populations of these frigid regions, for at the same time that the fat serves to warm and illumine their dwellings, it also imparts to the interior of the body that strength and heat of which the *Esquimaux* has need in the cold and severe climate of the country which he inhabits. Thus my *young* readers will not be very much surprised to learn, that at one of their stations the missionaries having prepared a beautiful Christmas tree, adorned with little candles, for the entertainment of the school children, the latter, after enjoying for a moment the spectacle of these dazzling lights, begged permission to extinguish them in order to eat them.

The apparel of the *Esquimaux* consists of a garment of double reindeer skin, which descends from the chin to the knees; behind is attached a hood for covering the head; their feet are encased



Esquimaux.

in great boots of skin, with the hair turned inward. The women have nearly the same costume as the men, except that their boots, in the form of bags, are much more ample, and are sometimes used as pockets, or even as cradles for their infants. The nature of the skins and furs varies, however, according to the season. It is also the same with their dwellings. The ordinary houses are composed of a rough wooden or whalebone frame, above which is placed a thick layer of turf. In summer the Esquimaux live under circular tents built on poles, and covered with skins sewed together; with these tents they are continually migrating from one place to another. But if obliged to travel in the winter, they construct themselves a temporary hut, by cutting huge square blocks in the hard snow, which they pile one upon another, so as to form in the interior a regular dome, the centre of which is nine or ten feet in height. A large piece of thin and transparent ice answers for a window. When the hut is filled with men and dogs, and lighted by a good lamp, a tolerably comfortable temperature is maintained; sometimes, however, the cold terribly penetrates these abodes. No journeys are performed with greater rapidity than those of the Esquimaux. When the sledding is good, it is no rare thing for them to accomplish as many as forty leagues in a day. Twenty dogs are usually harnessed together for the transportation of travellers. These animals are of the wolf-dog race; they are ill favored, and little can be said in praise of their dispositions. They often draw and run in a very disorderly manner, and consequently become caught in the shafts, compelling travellers to stop and disentangle them. To insure good order, a thoroughly trained dog must be placed at the head; but a very skilful driver is no less indispensable, who, by constantly flourishing a long whip, spurs his beasts and directs them by his vociferous and incessant cries.

A portion of the Esquimaux of Labrador are still idolaters, subject to dreaded sorcerers, abandoned to polygamy and every species of vice. But the gospel has also obtained great triumphs in the midst of these unfortunate tribes. Missionaries of the church of the Moravian Brethren, braving the cold and every kind of privation, have succeeded in establishing themselves in the midst of the Esquimaux, introducing among them some of the

arts of Europe, teaching them prudence, and imparting to them a knowledge of Jesus Christ. After long years of labor and expectation, they have the satisfaction of seeing clustered around their principal stations, *Nain*, *Hebron*, *Okhak*, and *Hopedale*, churches and flourishing schools, whose example and influence extend to a distance into the countries of the interior. Unfortunately, European colonists have located themselves in increasing numbers in the southern part, and exercise a very unfortunate influence upon the natives, whose welfare the missionaries are endeavoring to promote.

NOVA SCOTIA. — This small peninsula extends between the Gulf of St. Lawrence at the north, the Atlantic Ocean at the east, and the Bay of Fundy at the south-west. This latter, which separates Nova Scotia from New Brunswick, is a deep gulf, very much indented, where navigation is impeded at certain seasons by thick fogs and ice, and where the tides, which attain the extraordinary height of from 60 to 70 feet, come in with such rapidity that the cattle grazing near the shore are often surprised and submerged.

The *aspect* of this peninsula is generally rugged and mountainous, especially towards the north; the coasts are for the most part sandy, but at some distance from the sea the soil is extremely fertile.

The *climate* is very severe in winter; the sea fogs then render the atmosphere dense and unhealthy; the heat in summer is, however, very great, and rapidly ripens the crops.

The *mineral productions* are not various; it produces *pit coal*, also *iron*, reputed equal to that of Sweden.

The *vegetation* is that of the cold temperate countries. The fields are sown with wheat, rye, peas, kidney beans, and various vegetables, hemp, flax, &c.; gooseberries and raspberries grow to perfection in the woods which crown the heights. The forests contain superb specimens of oak, fir, pine, and birch trees, from which the inhabitants derive important revenues. They furnish material for numerous ships, constructed at Halifax, the principal commercial port in the country, and much of this wood is exported to England for building purposes. Thus navigation in the neighboring seas and in the River St. Lawrence is extremely active,

avored as it is, moreover, by the circumstance that, among all the civilized countries of America, there is none which lies so near to Europe as Nova Scotia. The great steamships do not require more than five or six days to accomplish the distance from Halifax to the western coast of Ireland, and the electric telegraphs then instantaneously transmit the news from these two extreme points to the interior of the two continents.

The *animals* of Nova Scotia are, for the most part, the same as those of Labrador. The rivers abound in fish, and especially in salmon; the forests in small game. There are found an abundance of foxes, deer, and sometimes also the *moose deer*, or *American elk*. This animal, which is larger than the European elk, commonly attains the size of a horse. The male has horns similar to those of the stag, and weighing as much as fifty pounds; it sheds them every spring. In summer the elk frequents low



The Moose Deer.

and damp forests and marshy places, for the purpose of immersing itself in water in order to preserve itself from the attacks of insects; in winter, it inhabits high places. Its fore quarters being higher than its hind ones, it is obliged, when grazing, to spread its fore feet. It trots heavily, and its gait has none of the

grace of the stag. It is hunted, like the latter, by men and dogs. In winter the Americans find this chase less difficult than in summer, because they can sustain themselves on the snow, by attaching to their shoes large wooden rackets, several feet in length, while the elk sinks in it, and is easily overtaken. The flesh of this animal is said to be light and nourishing. The Americans at the north assert that it contains more sustenance than that of any other animal. Its skin is excellent for shoulder belts, and its horns are employed like those of the stag.

The *population* consists almost exclusively of English Protestant colonies; however, some remnants of the indigenous tribes of Indians may yet be seen there, vegetating in a half-wild state, wandering like the Bohemians, whom they also resemble in the habit of stealing and carrying away children. Once initiated into savage life, the sons of the whites are lost to their families and to society; and if by chance recovered, they are no longer content to spend their lives in the cities with their parents.

FLORIDA. — *Florida*, a large peninsula, whose surface equals nearly a fourth of France, projects from north to south, between the Atlantic Ocean and the Gulf of Mexico, terminating at the south in *Cape Sable*. It seems to be designed, like an immense dike, to break the first shock of the famous Gulf Stream, — which, as we have remarked, attains at this point, a speed of five miles an hour, — and thus to prevent its entering the Atlantic with irresistible force.

Aspect. — Florida is generally level, probably never elevated more than 250 or 300 feet above the sea, and the southern part of the peninsula is covered with a large sheet of water, called the *Everglades*, of an immense extent, filled with islands. The central portion of the peninsula is somewhat elevated, the highest point being about 170 feet above the sea, and gradually declining towards the coast on each side. The western portion of the state is level.

Climate. — From the relative number of deaths occurring annually, — taking into account those deaths which are owing not to the climate, but to the fact of this state being a great resort, at least during winter, for invalids from the north, — it would appear that Florida is among the healthiest, if not the very healthiest, of the United States.

The *vegetation* is very rich and magnificent, and the air is embalmed with the perfume of flowers of such beautiful varieties, that one would be led to attribute to this circumstance the name of the peninsula, were it not a well-known fact that it was so called by the Spanish navigator, Ponce de Leon, in remembrance of the day in which he took possession of it, which was Palm Sunday, (*pascua florida*.)

There are found in this country three kinds of soil, characterized by their vegetable productions — the *fir plantations*, (whose soil, almost always sandy and sterile, furnishes only pines, excellent for building purposes,) the *savannas*, and the *marshes*. The savannas form immense prairies, whose grass, from four to five feet high, undulates like a sea beneath the breath of the wind, while a few groves of trees, erecting their verdant heads like so many small islands, refresh the eye, wearied with the monotony of the landscape. The marshes alone occupy more than half of the province. In their stagnant mud flourish rushes and gigantic reeds; their water pools are hidden beneath the green and broad leaves of the water lily; and it is a singular fact that many species of full-grown forest trees overshadow these incessantly submerged soils — the ash, elm, laurel, and oaks producing acorns sweet and savory as our chestnuts. Above them all, however, towers the straight and smooth trunk of the *swamp cypress*, like a column, 100 feet in height and from 8 to 10 in diameter, crowned by a broad canopy of delicate leaves, whilst numerous shoots, issuing from its roots, form round the base a kind of enclosure, at the top, of a brilliant red.

But to see nature displayed in all its vegetable luxuriance, one should penetrate into the *hummocks* interspersed among the pine forests and marshes. Here cedars and evergreen oaks every where interlace their branches with those of the magnolias, laurels, &c., or with the boughs of the *sassafras*, large and beautiful trees, whose root and bark are employed in medicine as a sudorific. Among these trees, with their robust branches, the *palms* balance their slender columns and their broad, fan-shaped leaves. The wild vines of the convolvulus, whose trunks are sometimes a foot in diameter, bind together these children of the forest, running from one to another, in verdant festoons, and forming colonnades without end, through whose long arches the

rays of the sun never penetrate. Under these natural canopies the more modest plants unfold themselves. Here is found the *wax tree*, a shrub whose small, globulous fruit is covered with a white substance, easily extracted by means of boiling water, and of which, when bleached, wax tapers are made, that, in burning, diffuse an aromatic odor. The perfidious *Venus's fly-trap* here spreads its leaves, bristling with prickly hairs, which, suddenly



Venus's Fly-trap.

closing on the slightest touch, pierce with a hundred darts the imprudent insect which alights on them. By the side of the latter, the *sarracenia*, or side-saddle flower, erects its noble flower, of a golden yellow, and its leaves disposed in the form of a pitcher with a lid, which is nearly half full of water, a beverage always cool, and which seems preordained by nature to allay the thirst of the traveller.

Many of the fruit trees of Europe have been naturalized in Florida. The *orange*, among others, is larger, of a better flavor, and more juicy than that of Portugal. *Maize* is almost the only cereal raised there. Vast plantations of *tobacco*, *sugar cane*, and

especially of *cotton*, are cultivated by slaves. It is said that the white race could not endure the miasma which a burning sun develops amid the dampness of these plantations.

The *animals* of Florida are no less remarkable than its vegetables. Myriads of birds, of brilliant plumage, sport among its trees and greenswards. Flocks of turtle doves, and parrots of gaudy colors, swarm on all the bushes. The charming little *humming birds*, so graceful and slender, sparkling with the brilliancy of rubies, sapphires, and emeralds, flit from flower to flower, and seem to vie in splendor both with the floral tribe and with



Humming Bird.

the great butterflies, which dispute with them the perfumed juices. Their most formidable enemy is a monstrous spider, with a hairy body and sharp pincers, which suspends near the nests of these frail birds a web, similar to yellow silk, and strong enough to imprison these little winged creatures, or which devours the eggs and the young in the absence of the mother, who, often in her turn, pursues the destroyer, and makes it her prey. Along the rivers, and on the lakes, numerous flocks of *ducks* mingle with the large-throated *pelican*, the *cormorant of the Floridas*, with crests whiter than snow, and the *flamingo*, with its long legs and neck resplendent with its rosy plumage. And while the *mocking bird* repeats by turns the songs and cries of these feathered tribes, the *white-headed eagle* majestically soars in the highest ether.

Troops of *deer* traverse the deserted plains. Sometimes they are seen to fly with the rapidity of lightning before a band of famished wolves, or pursued by some *jaguar*, with spotted skin.

The latter, which takes the place of the tiger in America, is generally much less to be feared than its Asiatic brother. It easily



Bird-catching Spider.

climbs trees, and causes much mischief among cattle; but it rarely attacks man, at least in Florida. Its fur, sprinkled with black rings, with a black dot in the centre, is highly valued. Several large species of *squirrels* skip from branch to branch, pursued by *wild cats*, no less carnivorous than agile; their agility contrasts forcibly with the constrained and heavy movements of the *black bears*, which share with them these aerial retreats. Numerous *serpents* writhe in the grass beneath; on the borders of ponds resounds the voice of the *bellowing frog*, in notes almost as sonorous as those of a bull, and to which the *alligator*, or American crocodile, loudly responds.

The *population* is composed of whites, negroes, and Indians. The Florida planter is lively, intelligent, generous, and hospitable. The *negroes* are slaves, employed in all the severe labors on the plantations, and are sometimes the victims of the most barbarous treatment. The unfortunate *Seminole Indians*, who, entrenched in their marshy forests, struggle with the energy of

despair against the extermination with which they are threatened, are vigorous men, large and well made, as skilful in handling the long carabine as the arrows and the hatchet. A few thousand of them only remain, and they will soon, undoubtedly, have completely disappeared from the face of that land where their ancestors long reigned without a rival.

YUCATAN. — The peninsula of *Yucatan* projects from the south-west, in a north-easterly direction, between the Gulf of Mexico and the Caribbean Sea, and terminates in *Cape Catoche*. At the north-west of this peninsula is found the *Bay of Campeachy*, and at the south that of *Honduras*.

Aspect. — The country is said to be very flat, traversed by a chain of hills of little elevation. It is almost every where covered with thick forests, and generally uncultivated except on the north-western coast, and near the Bay of Honduras, where the English have some establishments.

The *climate* is hot, dry, and salubrious in the interior, but extremely unhealthy near the coasts, which are low and marshy, and whose stagnant waters exhale dangerous vapors. The rainy season lasts five months, and nowhere is a more variable temperature to be found.

The *vegetation* is that of the tropical countries. Providence has lavished upon these regions an unusual variety and abundance. The trees are covered with the parasitic foliage of thousands of plants. Here the *convolvulus* entwines like masses of hanging and entangled cordage. Elsewhere, they overleap torrents, and serve as natural bridges for travellers surprised by the swollen waters. Their garlands are almost always the asylum of multitudes of *parrots*, *monkeys*, birds, and insects of all kinds, which delight in poisoning upon them. But woe betides him, who, reckless of the jaguars and dangers of the dew, allows himself to be benighted in these damp solitudes.

All the plants of the West Indies might be cultivated in this country; fruit trees grow wild in the midst of the forests, where, on every side, magnificent flowers exhale the most exquisite perfumes. But the only products to which any importance is attached are the mahogany and campeachy woods.

The *acajou*, or *mahogany*, is a large and beautiful American

tree, whose trunk is often 18 feet in circumference, and 40 in height. Its wood is hard, susceptible of a fine polish, impervious to worms, and of a beautiful reddish color of various shades. It is used in cabinet work for all kinds of elegant furniture.

The mahogany of Yucatan, softer and less capable of polish than that of the West India Islands, is, nevertheless, sold at very high prices, and is beginning to be exhausted. It is now rendered very expensive, because it is only to be obtained at a great distance from the coasts, by traversing forests where one is often obliged to make his way hatchet in hand. In the month of August, when the mahogany leaves assume a reddish hue, the *surveyor*, or principal workman, climbs the tallest tree in the country, in order to ascertain from thence the places where the mahoganies are the most abundant. He then descends, clears for himself a passage to the trees, and as soon as he has corroborated his discovery, whistles to summon his companions, who saw the trunk into several pieces in order to facilitate its transportation, and afterwards square it in blocks. After this, they are obliged to lay out roads, over which, by means of rollers or carts drawn by oxen, the logs of wood may be transported to the nearest river, to be floated or towed thence into the sea. The solid mahogany is rarely used on account of its great cost; it is generally sawed into very thin veneers, which serve for the veneering of furniture, whose surface thus presents all the beauty of mahogany, although the article may be constructed of common wood.

The *logwood* (*hæmatoxylon campæchicum*) is furnished by a thorny tree, whose height varies from 40 to 60 feet. The central part of this wood is of a deep red, whereas the layers found next the bark, and which botanists call *sap wood*, are of a yellowish color, and are rejected as worthless. The logwood is exported from America in great logs, stripped of their sap wood. It is of a deep brown, very hard, and susceptible of a fine polish. Although used in the manufacture of some articles of cabinet work, it is principally employed in dyeing a brilliant red, or violet blue. It is also sometimes used in medicine.

The *animals* are essentially those of Florida, and deserve little mention. It appears, however, that the *mosquitoes* are the most

cruel of torments, insomuch that their name has been given to the coast at the south of the Bay of Honduras, (*Mosquito Coast.*) "The colonist," says a traveller, "must keep a close watch over his horse, otherwise the ears of the unfortunate beast will be nearly consumed by myriads of these insects; if it has a wounded back, it must not be sent into the savanna, for the flies would so madden it, that it would inevitably become their prey, and be devoured alive."

The *population* is composed of strong and vigorous Indians, athletic in form, but excessively indolent, and imposing all the severe labors upon the women. These Indians descend from the ancient Caribs; the colonists usually employ them as fishermen and hunters. They are very partial to the English, who have founded establishments upon these coasts for procuring the mahogany and logwood; but they detest the Spaniards, their ancient masters, and are continually at war with them.

CALIFORNIA.—The peninsula of California (or Old California) is a country but little known, situated west of the Gulf of California. Its soil is one of extreme aridity. It contains no rivers, and scarcely any streams, and the traveller is often obliged to provide himself with water for two or three days in advance.

The *climate* is generally very hot, the air exceedingly dry, and the purity of the atmosphere remarkable. The sky, of a dark blue, is scarcely ever obscured by clouds.

The *mineral productions* of Old California appear to possess none of the importance of those which have rendered the New so celebrated throughout the whole world.

The *vegetable kingdom* offers very few resources. Thorny plants and shrubs, among others enormous *cactuses*, abound in these sandy and arid soils. In the rare spots where water and vegetable earth are found, the grains and fruits of Europe multiply astonishingly; the vine yields a generous wine, similar to that of the Canaries.

The *animals* present nothing remarkable.

The *population*, which, up to the present time, has been very thin, consists of a small number of whites, of Spanish origin, and of a few Indians, who are subject to them, both very indolent, and of the Catholic religion.

RUSSIAN AMERICA. — *Russian America*, with the peninsula of *Aliaska*, is a vast peninsula, which extends towards the west and south-west, between the Arctic Ocean, Behring's Strait, and the Pacific Ocean. Although it presents a considerable surface, this frigid country has never possessed any other importance than that of having served, together with the Aleutian Islands, which depend upon it, to establish natural relations between America and Asia.

Aspect. — Russian America exhibits, on all sides, the wildest and most gloomy aspect. Above a range of hills, covered with pines and birches, rise barren mountains crowned with enormous masses of ice, which often become detached, and descend with a fearful crash into the valleys or sea. Beneath the pressure of a similar mass forests are uprooted, torn to fragments, and dispersed to a distance. The echoes of the shores reverberate as with a thunderbolt, and vessels experience the shock.

Climate. — Excessive cold, similar to that of the north of Siberia, reigns on the borders of the Arctic Ocean, and of Behring's Strait. The climate of the southern coast, on the contrary, has a temperature as mild as that of the coasts of Europe situated in the same latitude. Well sheltered from the polar winds by the high volcanic mountains which skirt the coast and traverse the peninsula of *Aliaska*, this portion of America is but little exposed to attacks of cold in winter; but, on the other hand, it is scarcely warmer there in summer than in Finland, or even in Lapland, and the dampness is so great that hay cannot be dried, nor barley ripened.

The *vegetation* is neither rich nor abundant; herbage is not wanting in favored spots; *cabbages*, *turnips*, and *potatoes* thrive there; also certain wild fruits — among others, *strawberries* of excellent quality; the trees consist of firs and birches, and even these disappear in the most northern portions.

Animals. — In Russian America, as in the other polar regions, the animal kingdom affords the inhabitants their most important resources. It is indeed solely in consideration of the fur trade, of the reindeer hunt, and of the capture of sea otters, seals, morsers, and salmon, that colonists have established themselves in these remote and gloomy regions. The *morse hunt* is one of the most

important ; it is carried on by the natives, who afterwards sell the teeth which they have collected to the agents of the Russian American Fur Company. These teeth, or tusks of the morse, equal in quality to the ivory of the elephant itself, furnish the principal object of commerce in these countries. No use is made of the flesh, fat, or skin. As these animals move with difficulty on land, the art of the hunters consists in frightening those which are already at a little distance from the shore, and driving them farther into the interior, where they soon become exhausted, and the hunters can approach them without danger of being overthrown and crushed. Then each one, selecting his victim, plunges his lance into the thinnest part of the skin, and endeavors to increase the wound, in order to accelerate the animal's death by loss of blood.

The *population* is composed of a few thousand Russians, or descendants of Europeans, — who constitute the predominant portion — tribes of Esquimaux towards the north, along the coast of the Arctic Ocean, and Indian tribes, still wild, in the forests of the interior. These Indians, generally very squalid, always at war with each other, and some of whom it has been affirmed are cannibals, prefer the hunt to the fishery, and find their principal resource in the reindeer. However, during the summer they devote themselves assiduously to the capture of salmon, prodigious quantities of which, at this season, ascend the current of the rivers very far into the land. A small number of these savages, in more habitual contact with the Russian colonists, have become Christians, and belong to the Greek church.

SECT. 4. MOUNTAINS OF AMERICA. THE ANDES. — One feature which distinguishes America from all other parts of the world, is a vast chain of mountains which traverses it from north to south, almost from one extremity to the other. This chain bears the name of *Andes*, or *Cordilleras*, (*Cordillera de los Andes* ; that is, chain of the Andes.) These mountains generally follow the coasts of the Pacific Ocean. Except those of the Himalaya, they are the highest in the world ; they attain their most considerable elevation east of a kind of recess, formed by the ocean, towards the centre of the western coast of South America, known as the Gulf of Arica. There are found, among others, the *Nevada*,

(snow-clad) *ae Sorata*, 21,290 feet high, and the *Nevada de Illimani*, which attains 21,150 feet. Farther north, nearly under the equatorial line, is the Chimborazo, long considered the highest peak in the world, but which is in reality only 21,424 feet in height. At the Isthmus of Panama, the chain of the Andes diminishes to such a degree as to form only a line of high granite hills ; but they soon rise again in bold peaks, and acquire in North America an elevation which nearly approaches that of Chimborazo. In this part of the continent they are first designated by the name of *Cordilleras* ; farther north they receive different appellations, to which we shall hereafter refer.

From one extremity to the other, these mountains are interspersed with *volcanoes* ; and nowhere are they so remarkable for their elevation and the violence of their eruptions, America contains more than 200. The shocks of earthquakes, which precede or accompany volcanic eruptions, are one of the phenomena which cause the greatest consternation among the neighboring populations of the Andes. They often occur unexpectedly ; at other times they are announced by subterranean reports, hollow rumblings, similar to remote discharges of artillery. Domestic animals are then seized with disorders ; reptiles issue from their holes, birds are thrown into convulsions, springs dry up, and suddenly, within a few seconds, the earth gapes asunder ; some portions of the land are ingulfed, while others are upheaved, and entire cities are overthrown, burying beneath their ruins thousands of inhabitants. Even the sea furnishes no asylum, as vessels receive violent shocks if they are not indeed swallowed up.

Little less than a century ago, (in 1759,) on the plateau formed by the two Mexican Cordilleras, where are still found many terrible volcanoes, always active, such as the *Orizaba* and the *Popocatepetl*, (17,374 and 17,717 feet in height,) there was suddenly seen to issue from the earth, in a single night, a little volcano of 4114 feet in elevation, surrounded by five others of inferior height, which burst from the ground at the same time. It bears the name of *Jorullo*, and is still very active. The formerly fertile plain was completely subverted, and remained bristling with small basaltic cones, from which smoke escaped.

Two rivulets, which were ingulfed on one of the borders of this uplifted soil, reappeared on the opposite border, with a temperature of 62 degrees.

Thus upheaved, and frequently convulsed by subterranean fires of extraordinary power, the South American Andes have preserved an extremely severe and striking aspect, and a surface bristling with mountains, or intersected with ravines and crevasses, so that communication and the transportation of merchandise are obstructed by incomparable, if not insurmountable obstacles. More deep and narrow than those of the Alps and the Pyrenees, the valleys of the Cordilleras present the wildest landscapes, and such as fill the soul with admiration and awe. Fissures are often met with of so great a depth, that Vesuvius and the Puy-de-Dome might easily be cradled in them. Others, on the contrary, are so narrow that mules, trained for these dangerous journeys, do not hesitate to leap with their rider, abysses of many hundred feet in depth. Sometimes the valley, which serves for a passage to the high plateaus of the interior, is only a narrow chasm between two steep rocks of some hundred feet in elevation, and at whose base falling rocks momentarily threaten to crush the traveller. The streamlets which descend from the mountains render the paths so miry and slippery that horses and mules are constantly losing their footing. The foliage of the trees which overshadow these passes is so dense that one traverses them almost in the dark; and if he chances to encounter oxen or loaded mules, he is obliged to climb the rocky sides, clinging to plants or roots until the animals have passed.

But few stone bridges are constructed across these gorges or torrents of the Andes, their place being supplied by *cord-line bridges*, which are also generally employed over rivers of great width. Six huge cables of twisted cow-hide thongs, or twigs of vines, are thrown from one bank to the other in such a manner that four of them support the flooring, and the two others constitute the hand rails; across the middle cables are placed great logs, covered with roots, branches, and leaves. The oscillations of such bridges render the passage often perilous, and always appalling, especially when the traveller is obliged to lead by the

bridle his refractory steed. Other bridges, still more simple, called *huaros*, consist merely of a large cord suspended over the precipice; the traveller places himself upon a seat, which, sliding along the rope, is drawn from the opposite bank, or which he himself propels by the aid of his feet and hands.

The *passes*, or *cols*, of the Andes ascend 11,000, 15,000, and 16,000 feet, which is much above the peak of Mont Blanc. Nothing can exceed the desolation of these regions, where nature has undergone such terrible convulsions. Dazzling snow wearies the eye; enormous masses of bare, perpendicular rocks, and sombre abysses of unknown depths, excite the imagination, while the crashes of avalanches and the thunder of volcanoes startle the ear. On these high plateaus the landscape is dull and lugubrious, the rays of the sun pale, and the sky of a dark blue. The changes of weather are sudden and violent; thick and rapid clouds sometimes obscure the path; one is often obliged to prostrate himself on the ground to escape the violence of the wind, and snow or hail descend with irresistible impetuosity. During five months, from November to March, storms are of almost daily occurrence in the Cordilleras, commencing with astonishing regularity between two and three o'clock in the afternoon, and lasting until five or five and a half. The air trembles beneath continuous claps of thunder, a thousand times repeated by the echoes of the mountains, and the lightning traces its zigzag course on the ground, imprinting long furrows in the burned turf, or destroying in its passage, by a single stroke, a string of mules or a whole flock of sheep. The traveller, overtaken by these terrible hurricanes, abandoning to its fate his bewildered steed, seeks refuge and shelter beneath some overhanging rock.

A very singular phenomenon of these cold heights is produced by the *currents of hot air*, which descend from the mountains, and are often only 200 or 300 feet in width, or even less. Five or six of them were encountered in one day by Dr. Tschondi, during a journey of two leagues; at another time he followed for several hours one of these currents, which was only 27 paces in width, and whose temperature exceeded that of the surrounding atmosphere by seven degrees. At considerable heights also the

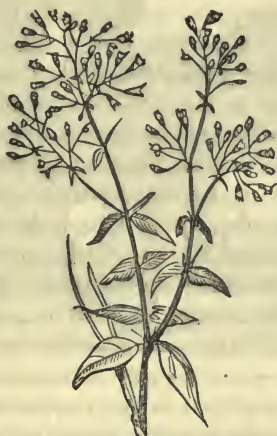
effects of the rarefaction of the air are painfully felt both by men and horses which have not been reared in these mountains. The natives forewarn one of a malady which they call *puna*, and which produces nearly the same disagreeable sensation as sea sickness. Men experience nausea, swoon, and blood gushes from their eyes, nose, and lips, sometimes debilitating them to such a degree that they die in consequence. Another distemper, no less to be dreaded among the Cordilleras, is the *surumpe*, a violent inflammation of the eyes, caused by the reflection of the sun upon the snow. "This," says the traveller quoted above, "induces suffering comparable to that which would be occasioned by a handful of pepper thrown into the eyes;" the afflicted individual can no longer travel, and utters cries of distress; sometimes, indeed, he is completely bereft of sight. When the creoles ascend these mountains, they take the precaution to provide themselves with green veils, and spectacles of the same color.

With a surface thus rent, and where so many obstacles render transportation difficult and expensive, nothing but great riches, of light bulk, could have invested with importance countries apparently so ill endowed. But it is needless to inform my readers with what a lavish hand Providence has diffused *gold* and *silver* in these mountains; for the mere mention of Peru, Mexico, and California is sufficient to recall the incredible riches which America has furnished to the human race—riches always ardently coveted by most mortals, and which, in the new world as well as in the old, have constantly proved the source of vexation and sorrow. M. de Humboldt, one of the most learned travellers of modern times, estimates the production of the mines of America, from its discovery to the commencement of the present century, at about \$1,340,000,000 in gold, and \$4,400,000,000 in silver. And yet this is trifling, in comparison with what is produced at the present time by the mines of California and Australia, which of late years have multiplied the production of gold tenfold. The silver is generally found on the heights, under the snowy peaks of this colossal chain; the gold in the gorges which skirt the foot of the Cordilleras, in the bed of the torrents, almost all of which contain a greater or less quantity of scales and grains.

The diversities of *climate* are very marked in the Andes ; they are naturally dependent upon the elevation. The *torrid zone*, at the foot of the chain, experiences a perpetual though never excessive heat, which, combined with the exhalations of a marshy soil and with the effects of extreme dampness, gives rise to pernicious fevers. The *temperate zone* maintains a constant and moderate heat, like that of a hothouse. The *cold climate*, or that of the high plateaus, is characterized, not by the intensity, but by the continuity, of the cold, the absence of all excessive heat, and a foggy atmosphere, which checks the growth of large vegetables.

The *vegetation* also presents a certain number of distinct phases, corresponding to the difference of climate. First, the *region of palm trees*, of various species, among which we shall only designate the *wax palm*, from whose internodes exudes a grayish-white substance, a species of wax, which is used in the country. Higher up, above 3000 feet, is the *region of the arborescent ferns*, which, in most climates, though only humble plants, in these countries attain the size of trees. There are likewise *granadillas*, or passion flowers, so called on account of the resemblance which has been discovered between some of their parts — stamens, pistils, &c. — and the nails, hammers, and other instruments, which were employed in the passion of our Lord Jesus Christ ; they are usually creeping plants, but in the Andes certain varieties acquire the dimensions of our oaks. To this same region of the Andes appertains one of the most precious vegetables of America, the *cinchona*, a tree whose bark, administered in a powder, decoction, or otherwise, has, within 200 years, rendered to medicine services of increasing importance, both as a *febrifuge*, for counteracting all kinds of fevers, and as a tonic, in cases where the system requires stimulating. The *cinchona* is distinguished by many species — the red, yellow, orange, gray, and white, besides the *Jesuits' bark*, which has also its principal properties. Some of these species consist of trees from 75 to 90 feet in height. But little use is made, at the present time, of the bark of the *cinchona* in its native state, chemistry having enabled us to extract the two essential principles which possess all its salutary properties, and one of which, the *quinine*, is now

almost solely in use. Higher yet, even at a height of from 6000 to 8700 feet, is found the *region of maize, oats, and wheat*; beyond this height the principal article of cultivation is the *potato*; above 12,000 feet all cultivation ceases. This is the *region of the gentians and Alpine plants*; after which comes that of the *gramineal plants*; and lastly that of the *mosses and lichens*, which extend even to the limit of the eternal snows. Thus. as one ascends from the base to the highest summit of the



Cinchona.

Cordilleras, he encounters the same phases of vegetation as when he advances from the equator to the frigid plains of Lapland, so general and constant is the influence of the climate.

Like the plants, the *animals* do not live indiscriminately on all the heights of the Andes. Passing over those which are found elsewhere, we shall specify only, as animals characteristic of the highest summits of the chain, at least in South America, the *lamas* and the *condors*.

The *lamas* are, in the new world, the representatives of the camel, whose principal characteristics they possess; but they differ from the latter in their more slender forms, their comparatively small size, the absence of a hump on the back, and in the

separation of their toes; for while an all-wise Providence has endowed the "ship of the desert" with broad feet, to prevent its sinking in the moving sands, it has provided the small cloven foot of the lama with too hooked claws, of which it avails itself in a marvellous manner in clinging to the steepest acclivities of the mountains.



Lama.

This animal, of the size of a small horse, was the only beast of burden employed by the mountaineers of South America at the time of the discovery of this portion of the continent, and it still constitutes the wealth of the Indian. Its milk and flesh, especially that of the young lamas, furnish him with nourishment; its wool serves to clothe him, and is also converted into ropes of some value; the skin is extremely useful in saddlery; the excrements of the lama are also made available as fuel on the high plateaus, which are deficient in wood. These animals have so sure a foot, that they can safely traverse the borders of precipices where mules would be in danger of falling; they thus render inestimable services in these countries, intersected by mountains and ravines. They are employed in the transportation of all kinds of commodities and provisions; their progress, however, is very slow; they can accomplish only 4 or 5 leagues a day, and after

3 or 4 days' travel, require a rest of 24 hours at least. Their burden, moreover, must scarcely exceed 75 or 100 pounds; otherwise they lie flat on the ground, refuse to rise, and if beaten, strike their heads against the rocks, and kill themselves. They are, however, perfectly inoffensive, and their sole mode of defence consists in spitting at those who maltreat them. They are said to be very docile and extremely sober; hay and grass suffice for their entire nourishment, and they can pass several days without drinking, because, like the camel, they have an internal supply of water.

The above description applies particularly to the domestic lama; but there are, as it appears, three other species, which it is important not to confound: 1. The *guanaco*, or wild lama, living in numerous troops, near the region of eternal snows, as wild and as agile as the chamois: the color of its hair is generally brown. 2. The *alpaca*, smaller than the former, and whose body is covered with a wool longer and no less fine and soft than the richest fleeces of the Cashmere goat: thus it has long been used for the finest fabrics, especially in England, and the French are seriously considering the means of acclimating this valuable animal in the Pyrenees or in the Alps. 3. The *vigona*s, which are frequently confounded with the preceding species, also yield a fleece which in fineness surpasses all known wools; unfortunately, the number of these animals is rapidly diminishing, the natives pursuing them untiringly, even to the heart of their snowy retreats, where they entrap entire flocks in their snares. The attempt to reduce them to a domestic state has never succeeded.

The *condor* is the largest of the birds of prey. It frequents the highest summits of the Andes, and builds its nest at a height of 15,000 feet above the level of the sea. M. de Humboldt, in ascending the peaks of Chimborazo, has seen it hovering in a circle at a height of 22,000 feet. At certain periods, however, these birds descend in troops into the plains, and even to the borders of the sea, in order to feast on the carcasses of dead whales.

Although the body of this vulture is no larger than that of a sheep, its extended wings often measure as much as 15 feet from

one extremity to the other, and it seems to sport amid the tempests of the air. Its plumage is black, the skin of its head of a hideous aspect; this is shrivelled, as likewise a part of its neck, and covered with thin, black hair; a necklace of beautiful white down separates it from the feathered portion of the neck. The beak of the condor is terrible; its talons are powerful, but not sufficiently so to enable it to carry off cattle, as some travellers have affirmed. This bird seeks new-born animals, which it kills and devours, if the mother does not maintain a vigilant watch. If the game is tempting, and its attainment difficult, — if, for example, a calf is the object of pursuit, — several condors unite in the undertaking. It does not appear that their audacity ever leads them to defy man, although they are perfectly competent to carry off children from ten to twelve years of age. In order to rid themselves of these terrible enemies, the farmers who raise cattle are in the habit of depositing the flayed body of a horse upon an eminence, surrounded by an enclosure of stakes, where they conceal themselves under a shed covered with branches. As soon as the prey begins to putrefy, the condors, attracted from a distance by the odor, approach and hover over the enclosure, hesitating between fear and desire. At length one of them alights on the prey, and is followed by all the rest; the door is then gently closed, and thenceforth all these voracious creatures, gorged with food, are unable to quit this charnel house. In order to resume their flight, they must necessarily run a few paces, which they are prevented from doing by the stakes; the door of the enclosure is afterwards opened, and as they issue, one by one, they are slain in the passage.

ROCKY MOUNTAINS. — The northern continuation of the Cordilleras, from its commencement at the point where the two principal Mexican chains unite, as far as the Arctic Ocean, bears the name of *Rocky Mountains*, and is distinguished in a very marked manner from all the rest of this great chain. This range, of a severe and sombre aspect, is still an object of veneration to the natives, who consider it the residence of the Great Spirit, and there locate the *blissful hunting grounds*, their imaginary paradise, where the souls of the good and brave will be suffered to chase eternally inexhaustible herds of buffaloes, elks, and stags.

These mountains, isolated on the right and left from the rest of America by immense sandy and arid plains, complete *deserts*, almost entirely destitute of vegetation, are themselves covered with very fine forests, consisting principally of magnificent pines, whose perfectly straight trunks rise to 200 feet in height, while their cones contain kernels which are considered very savory. Although these woods are very beautiful, they are not of the first quality. Certain animals are found only in this region, as the *black-tailed stag*, with long ears, and much larger than the ordinary stag, but whose flesh is not as highly esteemed; and the *big-horn*, or *mountain sheep*, a species of mutton, or argali, of the size of a large stag, of a tawny color, and chiefly remarkable for its enormous horns, shaped like those of the ram; these animals possess all the habits of the chamois, inhabiting the highest peaks, browsing on the grass on the borders of precipices, and leaping from rock to rock with the greatest agility. These mountains, and those of California, are the principal retreat of the *grizzly bear*, the most formidable quadruped of North America. It is as large as a common-sized cow, of prodigious strength, and often attacks man without provocation; in all cases it becomes furious when wounded, and unfortunate then is the horse or rider that falls into its terrible claws, which are sometimes nine inches in length, and tear in pieces every thing which comes in their way.

Compared with the imposing chain of the Andes, all the other mountains of America appear insignificant and unimportant. They are, moreover, very few in number.

APPALACHIAN, OR ALLEGHANY MOUNTAINS.—The next mountain system in North America, which merits our attention, is that of the *Appalachian*, or *Alleghany Mountains*, stretching from north-east to south-west, from the Gulf of St. Lawrence to that of Mexico, over a length of 600 leagues and a breadth of 50. These mountains, which are composed of several parallel chains, bear a great number of names: *White Mountains* and *Green Mountains* in New England; *Blue Ridge*, *Alleghany*, *Laurel*, and *Cumberland*, in the Middle and Southern States. All are of little elevation; and *Black Mountain*, in North Carolina, is the highest of their peaks, being 6476 feet in height; and *Mount Washington*, in New Hampshire, is 6226 feet.

Mines of *gold* and *auriferous sands*, of considerable importance, are worked in the Blue Mountains; but the great and essential sources of wealth derived from the Appalachians are, besides the forests, inexhaustible mines of *coal* and *iron*. Each of their valleys may be considered a coal basin; thus this combustible, which is of excellent quality, is furnished at a very reasonable rate. The forests contain many species of vegetables, of which we shall mention only the most remarkable. Thus a variety of oak, called *quercitron*, possesses in its bark a yellow coloring principle, which can be applied to wool, silk, or paper. This bark, which contains much *tannin*, is also employed in the preparation of leather. Among the ornamental trees of these forests should be named the *tulip tree*, a large and beautiful tree, whose greenish-yellow flowers resemble tulips; its bark and root, which are bitter and very aromatic, are regarded in medicine as tonic and febrifuge, and are sometimes substituted for the *cinchona*. The most magnificent of all the trees of the Alleghanies is the *magnolia*, which combines majesty of bearing and beauty of foliage with the magnitude and abundance of its flowers. It sometimes shoots to a height of a hundred feet and more; its straight and smooth trunk terminates in a beautiful conical peak; its large flowers, of the purest white, and in form similar to roses, diffuse an agreeable but very powerful perfume; they are succeeded by a crimson cone, which, unclosing, displays, suspended by delicate threads, round seeds, of the most beautiful coral red. The bark of the *magnolia*, like that of the *tulip tree*, is often employed as an antidote to fevers, under the name of *Virginia cinchona*. Although this is essentially an ornamental tree, now naturalized in many foreign parks and gardens, it also furnishes an excellent wood used in cabinet work.

THE CORDILLERA OF VENEZUELA. — The *Cordillera of Venezuela*, or of *Caraccas*, is a continuation of the Andes, running along the coast of the Caribbean Sea, and extending from south-west to north-east. It is of little elevation, and admits almost every where of the industry of the cultivator. Upon arriving at a certain height, one enjoys the freshness of perpetual spring. The rainy season lasts from November until April; during the six following months rain is rare, and the drought sometimes very

severe. Thus, at the foot of the mountains, the population literally pass the greater part of their time in the water during the hot season. Whole companies, very lightly clothed, establish themselves in the middle of the river, on chairs arranged in a circle. There, with the water up to their breasts, they smoke and drink lemonade, which is gravely handed by negroes; and conversation is often prolonged until morning, sometimes, although rarely, interrupted by the apparition of some importunate crocodile. Frequent and terrible earthquakes are the principal scourge of this country. The forests which clothe these mountains are capable of supplying for centuries the largest timber yards; but the nature of the soil renders it difficult to profit by these woods, many of which are valuable for dyeing and inlaid work. Medicinal drugs are obtained thence; among others, cinchona (of inferior quality) and *sarsaparilla*. This latter substance is the root of climbers and evergreen shrubs, which grow in these countries. It is particularly renowned as a sudorific. These roots are of the size of a quill, of about two feet in length, gray or reddish, with a fluted and somewhat shrivelled bark. There are many varieties.

THE PARIMA MOUNTAINS. — The *Parima Mountains* consist of an irregular group of chains extending from west to east, in Venezuela and Guiana. They are but little known. Mount Maravaca is 10,500 feet in height, and is the highest point. They are almost entirely covered with thick forests, which are composed principally of hard woods, whilst the low lands yield only soft wood. Of 108 species of useful woods which exist in Guiana, may be mentioned, among others, the *acajou*, the *letter wood*, a large tree so called on account of the form of the black spots with which it is internally covered, and of which canes and stems of pipes are made, remarkable for their fine polish; the *satin wood*, of brilliant colors, very much employed in mosaic work; the *violet ebony wood*, of a beautiful dark brown color, and fragrant odor, particularly suitable for inlaid work; the *amaranthine wood*, of a purple red, and which serves the same purposes as the preceding; the *rose wood*, the *violet wood*, and many others beside.

But a more important production of these mountains and the neighboring countries is the *caoutchouc*, or India rubber the

elastic gum of a great tree. When the trunk of this tree is pierced, there exudes from it, in great abundance, a white, lacteous juice, which, on becoming solid, constitutes the caoutchouc. In moulding this material for exportation, several layers of liquid juice are poured over clay moulds, which are generally in the shape of pears. Its brown color is imparted to it by the smoke, to which it is exposed in drying. As soon as it has obtained the desired consistency, the mould is broken and the fragments are shaken out through the aperture reserved for this purpose. The caoutchouc is a very useful material. It is the most flexible and elastic of any known substance, and its tenacity is such that it is only by the use of great force that it can be broken. It is now employed not only for effacing pencil marks, but also for manufacturing probes and other instruments of surgery, braces, girdles, elastic cushions, portable life-boats, overshoes, &c. When made into a varnish, it is used for smearing cloth, which is thus rendered impervious to moisture, and may be converted into garments. The consumption of this article is immense, and is annually increasing.

MOUNTAINS OF BRAZIL. — The *Mountains of Brazil* are composed of many chains, but very little known, the principal of which follows the south-eastern coast of South America, bearing the names of *Serra do Espinhaço* at the north, and of *Serra do Mar* (or maritime chain) at the south. Near their point of junction, at the peak of *Itacolumi*, (5750 feet,) a third chain becomes detached, which, proceeding towards the north-west, then towards the south-west, serves as a line of separation to the great rivers of this part of America, under the names of *Serra Negra* and *Serra dos Vertentes*.

These mountains, at least those of the eastern chain, were formerly covered with magnificent virgin forests, where man could scarcely clear for himself a passage. But the fatal practice of burning instead of clearing them, when it is proposed to devote a portion to cultivation, has caused such a diminution in the quantity of wood, that, in certain quarters of the mining district, extremely productive mines of iron have been necessarily abandoned for want of fuel, or the means of transporting it from neighboring countries.

The principal sources of wealth of these mountainous regions are the *diamond mines*, which are found principally in the central portion of the eastern chain, and in that of the slopes. The diamonds of Brazil are considered less brilliant and less hard than those of the East Indies, but they are more abundant. They are often found in wholly uncultivated districts, some portions of which do not even produce grass. These diamonds are usually very small. They are generally mixed with sand in the bed of the rivers, and in order to procure them, the earth which is supposed to contain them is subjected to several successive washings. Formerly the exploration of diamonds was a monopoly of the government, which circumstance gave rise to many fraudulent and contraband proceedings. It is now abandoned to any one who chooses to risk in it his time and money. These painful labors are usually performed by negro slaves, for the benefit of their masters. Many of the miners are ruined, as it is a very uncertain enterprise; those who profit by it are the merchants who advance to the workmen articles of primal necessity, in exchange for their future discoveries. The slaves have the privilege of laboring on their own account on Sundays and holidays, and it has been remarked that on those days the finest discoveries are always made. The inhabitants of these countries are also occupied with *gold* washings, which sometimes yield considerable revenues.

SECT. 5. PLATEAUS AND DECLIVITIES OF AMERICA. — America includes a considerable number of high countries. Some are actual plateaus, situated at considerable heights; others possess rather the character of terraces or grades: such is the case with the first to which we shall invite your attention, commencing at the southern extremity of South America.

TERRACES OF CHILI. — *Chili*, west of the Chilian Andes, forms a long and narrow strip of land, almost entirely isolated from the rest of America by the majestic chain of the Andes, high, snowy, volcanic, and presenting a difficult passage even in summer. Its snows and sudden tempests cause many travellers to perish. There are no less than 16 volcanoes, whose activity is even less dreaded from their eruptions than from the earthquakes to which they give rise, and which have more than once

overthrown whole cities. Mount Aconcagua, 23,910 feet in height, is the loftiest summit in South America.

Aspect. — Viewed in a general manner, Chili may be regarded as a vast inclined plain, sloping gradually from a height of 16,000 to 20,000 feet down to the sea, over a space of more than 30 leagues. But, upon a more critical examination, it is found to contain three chains of parallel mountains, separated by successive plateaus, or by a series of gigantic terraces, clothed with the most luxuriant vegetation, and watered by numerous streams, which are skilfully diverted for purposes of irrigation.

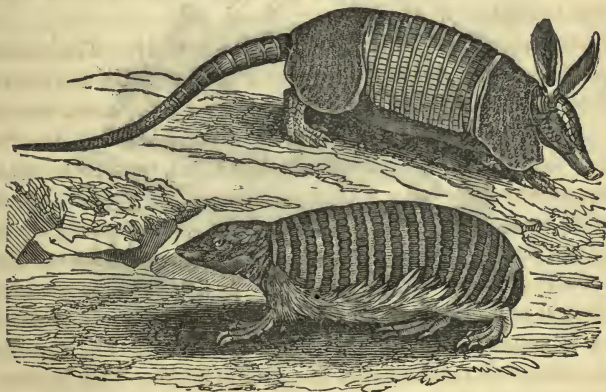
The *climate* of Chili is the most salubrious and agreeable in the world. Nowhere, it is said, could be found so equal and agreeable a temperature. But as this country is situated south of the equator, its autumn corresponds with our spring, and its summer with our winter.

Minerals abound. *Silver* mines are found there, and *gold* is obtained by washing; but *copper* is the most important metal, lumps of which have been found of from 50 to 100 quintals, and Chili may be considered one of the richest copper deposits in the whole world. Mines of *pit coal* are daily acquiring more value, and will hereafter render great services.

Vegetables. — The soil is of marvellous fertility. The cultivations of both hemispheres succeed equally there. In the interior *wheat* often yields a hundred fold, and nearer the coast, seventy fold. *Maize* prospers no less. The finest *hemp* of America, equal to that of Europe, is cultivated in Chili, on a great scale; in the southern provinces *flax* is an indigenous plant. All the fruits of Southern Europe, introduced into this country by the Spaniards, have succeeded to perfection; peaches are seen there of as much as a pound's weight, and apples as large as the head. The largest and most esteemed varieties of *strawberries* multiply in such abundance that throughout South America this excellent fruit is commonly denominated the *fruit of Chili*. This is almost the only country of the new world where the *vine* yields wine of undoubted excellence. The forests are superb, containing the most elegant varieties of evergreen trees; the *pine of Chili*, which attains to 240 feet; the cypress, the laurel, the cedar, and several species of oaks and hard woods, very much sought for

ship and house building. In certain places the grass is said to conceal the cattle in the prairies. Nor should we forget that Chili was the native country of the *potato*, now diffused throughout the world ; it grew wild at a little distance from the sea shore, but by cultivation and pains it has been made to succeed at a height of 13,000 feet ; the Spaniards first introduced it into Europe.

Animals. — The inhabitants of this favored country are neither annoyed by dangerous reptiles nor venomous insects ; large beasts of prey are also unknown there. All our domestic animals have thriven wonderfully : the Chilian horses are superior to all the other breeds of America ; the oxen are larger and stronger than those of Spain ; excellent cheese is manufactured from the milk of the cows ; the wool of the sheep is esteemed on account of its fineness and length. Guanacos, lamas, and vigones exist there in considerable numbers, and the condor builds its nest on the highest summits of the Andes. Among the animals peculiar to this country, the two following may be mentioned as somewhat remarkable. One of them, the *chlamyphorus*, is a species of mole,



Chlamyphorus.

which derives its name from a kind of hard, scaly cuirass, with little divisions similar to paving stones, which extends from the top of its head to its tail ; the under part of the body is covered

with white, soft, and silky hair. This animal, with much agility, digs itself a burrow, composed of long galleries, after the manner of the mole, by all of whose habits it is characterized. While rearing its young, it carries them under the outskirts of its scaly shell. Another charming animal, the *chinchilla*, is distinguished for the beauty of its fur, which is highly appreciated by European ladies. It is a little rodent somewhat larger than the squirrel, whose fore paws are shorter than the hind ones. The chinchillas live in holes under ground, possess social dispositions, and are fond of being caressed; they are very neat, and communicate no bad odor. They are hunted with dogs trained to catch them without damaging their precious coat. From 1828 to 1832 no less than 18,000 chinchilla skins were sold in London. Very



Chinchilla.

little of this fur is now exported to France, but it is not so much out of vogue in England. Formerly, it appears that the natives of these regions, more ingenious than those of the present time, were skilled in manufacturing cloth of the long and silky hair of this animal

The *population* is mostly white, and of Spanish origin, with a certain number of Indians and Mestizoes, all Catholics. The Chilians of the white race are large and robust, more active than the other creoles, lovers of liberty, and have made greater progress, generally, than all the Spanish Americans. At the extreme south of Chili dwell the *Araucanians*, brave and intelligent natives, who live in large villages, enact laws, and enjoy a regular government. Full of generosity and courage, proud and industrious, they are considered the most civilized indigenous nation of the new world. They have, indeed, not only blacksmiths and carpenters, but also goldsmiths, surgeons, physicians, and poets. They are but little occupied with agriculture, yet their cattle constitute their principal wealth. They raise immense numbers of horses and oxen; being skilful riders, and resembling the Tartars of Central Asia, they make incursions into Chili, where they commit robbery and every species of depredation.

PLATEAUS OF BOLIVIA. — The plateau of Upper Peru, properly so called, situated between two parallel chains of the Andes, east of the Gulf of Arica, is, next to Thibet, the highest country in the world, being more than 12,000 feet above the level of the sea; and there, east of Lake Titicaca, are found the two lofty peaks of *Nevada de Sorata* and *Névada de Illimani*. The high country known under the name of *Bolivia* includes, also, besides this plateau, a considerable portion of the region of the Andes, and presents terraces and secondary plateaus of much less elevation.

The *aspect* of all these plateaus is generally arid, gloomy, and cold; the winds which descend from the Cordilleras incessantly sweep these immense open plains, and check the development of vegetation. But in the numerous and deep valleys which intersect the plateaus, the soil produces abundant crops of all the grains of Europe, and towns and populous villages may be encountered at the height of the Peak of Teneriffe, and even of Mont Blanc.

The *climate*, generally rude and cold, is but slightly modified in the sheltered valleys; snow and the hurricane reign without interruption during four months. "A remarkable effect of the winds of the puna," observes M. Tschondi, "is the rapid wither-

ing of dead bodies ; a few days suffice to metamorphose a dead mule into a perfect mummy, whose entrails even cease to putrefy." Here and there this dry and cold wind, which causes excessive pain in the eyes and skin, is traversed by currents of hot air descending from the mountains, as we have said above.

Minerals. — The soil of Bolivia abounds with precious metals. Gold and silver mines are there reckoned by hundreds ; and as they are, for the most part, in regions as elevated as the summit of the Alps, the population has become concentrated around them, and cities are found at that height. The shepherd has been known to discover in the morning, on the hearth where he had lighted his fire the previous night, a rich vein of silver, the extreme surface of which the heat had dissolved, and thus exposed to view. But within a certain period, as it appears, the Indians have obstinately concealed the existence of mines known to their ancestors, being fully persuaded that they are to them only a source of pain and fatiguing toil, without any real profit. All my readers have heard of the famous mines of *Potosi*, a conical mountain of 16,000 feet in height. The top of the mountain is perforated by more than 5000 openings, made in search of silver ore. From 1545 to 1789, the mines of Potosi are supposed to have yielded the enormous sum of \$96,800,000 in gold and silver. These mines are now poorly worked, and falling into disuse.

The *vegetation* of Bolivia is, for the most part, that of our temperate countries. *Maize* and *wheat* are there cultivated, and the *potato*, which grows naturally, as in Chili ; and in the hottest valleys, the *banana*, *sugar cane*, *cotton*, *palm trees*, &c. A small plant, with which a bountiful Providence has gifted the inhabitants of these high regions, and which ripens at more than 13,000 feet above the sea, in a climate where neither barley nor oats could endure, is the *quinoa*, (*chenopodium quinoa*.) Before the introduction of our cereals, the natives made very great use of the seeds of this plant. Even now they use them in the preparation of soup, and of the leaves make a kind of beer, or eat them as spinach. Another plant, which is the friend and consoler of the Peruvian Indian under all earthly circumstances, is the celebrated *coca*, (*erythroxylon coca*.) It may almost be said to be more essential to him than his daily food, for it furnishes him

with the means of dispensing, to a certain extent, with meat and drink. While chewing a few coca leaves the Indian forgets all his woes, his tatters, and the cruelty of those who compel him to



Coca.

labor. A single meal a day suffices him, but three times at least, within that period, he must suspend his labors to chew his coca. It is said that this substance not only preserves his strength and prolongs his life, but also that it is a precious antidote against the injurious effects of the rarity of the air in these high mountains. The coca is a shrub, from four to six feet high; the flavor of the leaves is enhanced by a preparation with which lime and spices are combined.

Animals.—Of all the beasts of prey of the forests, the most dangerous is the *ounce*, or *jaguar*, which multiplies so rapidly in certain provinces of Peru, that it sometimes obliges the inhabitants to abandon their villages. But the animals especially to be dreaded are the innumerable *serpents* concealed beneath the thick beds of dead leaves, which cover the ground. The most dan-

gerous of all is a little viper, less than a foot in length, whose venom kills the most robust man in two or three minutes. The Indians, when bitten, do not even dream of seeking an antidote, but immediately stretch themselves on the ground to die. *Bats* are very abundant, and very large; some measure about two feet with their wings extended. Notwithstanding what has been said



Jaguar.

to the contrary, it appears that the *vampire* species steal into stables and houses for the purpose of feasting on the blood of sleeping men or animals. At first the vampire contents itself with scratching the skin with its muzzle; then, when its small, sharp teeth have pierced the outer skin, it gently sucks the blood, with which it gorges itself until surfeited. Although these disgusting animals can imbibe only a few ounces, the hemorrhage which they occasion is sometimes considerable, and mules often perish in consequence of the exhaustion caused by these repeated bleedings. A wound of this nature inflicted upon man produces a violent inflammation and a great swelling.

Although the meagre and yellow pasturage of the puna furnishes very insufficient nourishment for cattle, immense herds of *sheep*, *oxen*, *alpacas*, and *lamas* are raised.

The *population*, as in Chili, is composed of whites of Spanish origin, of Indians and mestizoes. The Indians are here much more numerous than the whites; they alone labor, but they are discouraged by all kinds of vexatious treatment, although the republican constitution of the country establishes a perfect equality between the Indian and the creole. The insufficiency of the population, the absence of good roads, the want of security and police, and the continual revolutions, arrest all activity, and obstruct the development of the natural riches of these countries. The inhabitants are all Catholics, but uneducated, very superstitious, and corrupt.

PERUVIAN PLATEAU.—The high country of Peru consists of two principal divisions; of high, bare, and arid plateaus, between the different chains of the Cordilleras, (concerning which we have nothing to add to what has been already stated,) and, between the Andes and the ocean, a long strip of arid and sandy coasts, intersected only by a few fertile valleys, through which the torrents force their way to the sea.

The *climate* of the sierra, or mountain region, is, judging from the longevity of the inhabitants, extremely salubrious; but it is often quite cold. In the plains, at the foot of the mountains, a mild temperature is enjoyed; the air is refreshed by the sea breeze, and by the wind which blows from the Cordilleras. It never rains there, but the soil is moistened by abundant dews.

The *mineral substances* no longer possess the same importance as formerly. The most numerous mines are those of *silver*; they are found especially on the high plateaus; the working of them is generally ill understood or abandoned, although this, notwithstanding, always constitutes one of the principal revenues of the country. *Obsidian* is also found there—a species of volcanic glass, of a black tinge, called *mirror of the Incas*, because the Peruvians made mirrors of it, as well as sharp-edged tools. A considerable quantity of *saltpetre* is also obtained from this country.

The *vegetation* of Peru has neither that grandeur nor power

which excite admiration in the other portions of America. The coast is only possessed of fertility on the borders of rivers; every where else a complete *desert of sand* meets the eye. In all the well-watered valleys, *orange*, *banana*, and *lemon* trees, tall as young oaks, form fresh oases. Much *maize* is cultivated, some varieties of *wheat*, which might be made to yield almost fabulous crops, the finest and best *potatoes* in the world, the *batata*, or *sweet potato*, the excellent *manioc*, root and vines, from which little is extracted except white brandy and a few cordials. On the eastern slopes of the Andes grow an abundance of renowned *cinchonas*, and different species of palm trees, among others the *wax palm*.

The *animals* are the same as those of Upper Peru, and it would be useless to enumerate them. But there is a very singular animal production, which we must not omit to mention, in connection with Peru, since it forms at the present time the principal wealth of the country, viz., the *guano*. This name is given to the excrements of sea birds — pelicans, petrels, boobies, secretaries, and frigates, which, every evening at sunset, perch on the small islands and the declivities of the shore, at the west of Patagonia, Chili, and principally the Chincha Islands of Peru. In certain places the layers of these deposits are as many as 20 to 40 feet or more in thickness; bones and other remains of birds are frequently intermingled with it. Other deposits have also been found at the distance of a league or a league and a half from the shore, which, from the fragments which have been discovered among them, appear to have been formed originally by vast shoals of fish, stranded on the banks, which have afterwards been upheaved by earthquakes, and removed to a distance from the sea. However this may be, the guano constitutes one of the hottest and most energetic manures that is known; and the agriculturists of North America and Europe make daily increasing consumption of it. This natural wealth, which costs only the labor of collecting and loading ships with it, is far more profitable to Peru than all its silver and gold mines. In 1846, it was exported to the value of nearly \$2,000,000, while the exportation of precious metals amounted to \$4,000,000. But in 1853, the

guano produced the enormous revenue of upwards of \$11,000,000, and the product of gold and silver had sensibly diminished.

The *population* is composed of three principal races — whites, negroes, Indians, and mixed breeds. The first are still the aristocratic class, holding the two others in contempt; the Indians as a conquered, and the negroes as a purchased people. They are few in number, and chiefly inhabit the cities; the negroes are likewise few in number, but their descendants, the *Zamboes*, the offspring of their mixture with the whites, form, along the whole coast, a lively, intelligent, and active, although corrupt population, which despise the Indian and detest the white man; these are the most skilful workmen in the cities. The mixed breed descending from Indians, the *cholos*, small, with yellow complexion, black and stiff hair, and broad and flat face, have, since the establishment of the republican government, occupied important places in the army and the government. The *Indians*, or trusty indigenous Peruvians, are of a melancholy and timid character, cowed by long oppression, pusillanimous in the moment of danger, ferocious and cruel after victory, and hard and implacable in the exercise of power. Greatly fearing the Spaniards, they yield submission to their mandates, but abhor them in secret. Robust, and capable of enduring labor, they stagnate in ignorance and uncleanness; the passion for gaming and liquor causes great ravages among them. The great diminution of the Indian population is even attributed mainly to the excessive use of ardent spirits. Although their religion is strongly impregnated with the superstitions of their idolatrous ancestors, they are strict observers of the feasts and ceremonies of the Romish church, and incur considerable expenses in processions and masses. The dramatic representations of the scenes of the life and passion of Christ, every where else abolished, are always the delight of the Indians, and government has not dared to provoke their hostility by depriving them of these festivals. They have preserved the language of the ancient Peruvians—a language so soft and agreeable, that the Spaniards voluntarily adopt it. There exist on the eastern side of the Andes independent and warlike Indians, whom the Spaniards have never been able to subdue, and

who are subject to *caciques*, or chiefs, real or pretended descendants of the Incas, or ancient kings of the country.

PLATEAU OF QUITO, OR ECUADOR. — This high country is composed, like the preceding, of a low and very hot coast, of temperate and fertile plateaus, from 8000 to 10,000 feet high, the principal of which are those of Quito, (9500 feet,) of *Pastos*, (10,000 feet,) farther north, and of valleys and secondary mountains, inclining to the east, towards the vast plains of the interior of the American continent.

Aspect. — These plateaus, surrounded by the double chain of the Andes and its snowy peaks, seem to be only deep valleys, where the population have chosen to concentrate themselves. This is especially the case with the plateau of Quito, completely covered with orchards and fine cultivated lands, strewn with villages and herds, and bordered with colossal peaks, among which towers Chimborazo. Many of these peaks are terrible volcanoes: *Cayambé*, whose majestic summit is precisely under the equator; *Cotopaxi*, among the most formidable of American volcanoes; *Pichincha* and *Antisana*. Such a vicinity has often involved the inhabitants of this country in terrible disasters. In 1797 a space of 50 leagues in length and 35 in breadth was literally subverted, and 40,000 persons perished at Quito and in the neighboring cities. At the time of the eruption of 1803, the sudden dissolution of the snow which covered Cotopaxi caused fearful destruction. In 1768 the ashes of this volcano diffused utter darkness for a distance of 25 leagues: at another time, its flames rose 3000 feet above the crater; on other occasions its terrible roarings have made themselves heard at 50 and even 200 leagues distance. If man could not habituate himself to every thing, even to danger, he would in this country necessarily live in a state of continual alarm.

The *climate* of this plateau, situated under the equator, would seem entitled to the mild temperature of a perpetual spring; and it formerly possessed such, until the terrible earthquake of 1797: since that period it has become more severe; the sky is dull and cloudy, and earthquakes much more frequent.

Minerals. — There exist mines of *gold*, *silver*, and *platinum*; but at such an elevation that the cold, and especially the want of

wood, render the working of them almost impracticable. From this country are also obtained *emeralds*, called *emeralds of Peru*, which are justly preferred to all others, since those of Egypt have been neglected. *Mineral salt*, *pit coal*, and *mercury* are likewise found. Among the most remarkable vegetables of this and the neighboring countries may be mentioned the *cacao*, which is care-



Cacao.

fully cultivated, and produces two crops a year. This vegetable, whose form resembles that of our cherry trees, requires to be protected by other trees against the force of the winds. It bears an elongated fruit, in the centre of which are clustered the kernels, enveloped in a watery and acid pulp. The largest gathering of these seeds, or the *cacao*, is made in December; there is a smaller one in June; each tree may yield two or three pounds of dried kernels. After being suffered to ferment, during a few days, and then dried in the sun, they are introduced into commerce, where they have acquired very great importance on account of the use which is made of them in the manufacture of *chocolate*, a dish which the Indians were skilled in preparing long before the discovery of America. This nutriment is merely the cacao, roasted, like coffee, in iron cylinders, commonly called *burners*, then crushed as fine as possible, and afterwards mixed with sugar, to be ground anew. This paste, which is formed into cakes by being poured into moulds, bears the name of *chocolat de santé*; it is generally flavored with some aromatic, such as vanilla or cinnamon, which improves the taste, and renders it more easy of

digestion. It is then an agreeable, wholesome, and strengthening food. The cacao nuts contain a great quantity of rich oil, which naturally thickens, and is known by the name of *cacao butter*, so called on account of its resemblance to real butter, to which it is preferred in medicine, as more softening in cases of burns, chapped skin, &c.

The other principal cultivations in this country are grain and fruits, cotton, tobacco, and indigo; an extremely celebrated cinchona is also obtained from the environs of Loxa.

The *animals* and *population* present the same characteristics as in the countries of which we have already spoken in the preceding paragraphs.

PLATEAU OF NEW GRANADA. — This high country, situated north of the preceding, is composed of a certain number of plateaus, several of which are very elevated, and can be penetrated only on foot, through chasms very difficult to thread. Thus it is in this part of the Andes that the barbarous custom of travelling on the backs of men principally prevails. The unfortunate beings who serve as beasts of burden are mostly Indians, or mixed breeds. Slightly clothed, often, indeed, almost entirely naked, they bear on their backs a chair, in which the traveller seats himself, protected by a large parasol, provided with a whip, and often with spurs, with which he does not hesitate to strike his bearer. Among the natural curiosities resulting from the bold and picturesque configuration of this country should be mentioned the *Cascade of Tequendama*, formed by the Rio de Bogota, (one of the rivers of the plateau,) which precipitates itself through a narrow opening into a ravine, 900 feet in depth, above which constantly rises a column of vapor that may be perceived at five leagues distance. It is also in the same neighborhood that the famous *Torrent of Icononzo*, or *Pandi*, is found, incased in an almost inaccessible bed, which could only be crossed with extreme difficulty, if Nature herself had not spanned it with two bridges of rock. The first, which is $44\frac{1}{2}$ feet in length and 37 in width, is 300 feet above the level of the torrent. A little lower is found another natural bridge, formed by three enormous masses of rock, fallen in such a manner as mutually to sustain each other, the middle one forming the keystone.

The *climate* of these plateaus is temperate, and even cold, but very healthy; while at their base, on the sea shore, and in the few neighboring plains, the air is hot, stifling, and pestilential.

The *mineral productions* are rich and various. On the plateau, near Bogota, beds of coal are discovered at a height of 7700 feet. Gold is principally obtained by washing; lumps weighing 25 pounds have been found at Choco, but the countries richest in gold are those where the dearth of wood and provision (on account of the difficulty of the roads) makes itself most severely felt; the veins of silver would be very rich, but they are extremely neglected. Emeralds, (called *Peruvian*,) some small diamonds, mercury, and salt are found.

Vegetables. — Here, as in the other portions of the Andes, the products of all climates are seen to succeed each other at different heights — the palm, banana, pineapple, the fruits of the south, the vine, and cereals. Besides the cultivations already enumerated in the foregoing paragraph, the cacao, indigo, tobacco, cinchona, and other plants and medicinal drugs, which furnish the principal objects of exportation, we should also specify the *vanilla*, a climbing plant, which rises to a considerable height, and grows in the hot, damp, and shady portions of equinoctial America. Its fruit, which is also called *vanilla*, is a pod of an aromatic flavor, and an agreeable odor; it is of the size of the little finger, and four or five inches in length. The beans are used for flavoring chocolate, ice creams, and pomatum. It is a substance which stimulates the digestive organs of the stomach, but which answers little other purpose in medicine.

The *animals* of this country need no especial mention, with the exception of the *guacharos*, a species of birds of the size of a hen, with black plumage, and which, in their habits, resemble the crow of the Alps. They retreat, during the day, into deep caverns, where they are reproduced in prodigious numbers. Every year, the Indians, armed with long poles, destroy the greater part of the nests; many thousands of small birds fall on the ground, and are opened on the spot. From them is taken a thick layer of fat, found under the breast, which is transported from the grotto to what is called the *oil harvest*. The fat of the young, freshly slain

guacharos is melted in pots of clay, over fires of brushwood. It furnishes a kind of half-liquid, transparent, and scentless oil, so



Vanilla.

pure that it may be preserved a whole year without becoming rancid.

The *population*, like that of the preceding plateaus, consists of whites of Spanish origin, of mestizoes, Indians, and a small number of negroes.

PLATEAU OF CENTRAL AMERICA, OR GUATEMALA.—Between the Isthmus of Panama and that of Tehuantepec, situated beyond the peninsula of Yucatan, between the Bay of Campeachy at the north and that of Tehuantepec at the south, stretches the

high country of Central America, which is composed of several inconsiderable plateaus, the principal of which is that of Guatemala. The latter, situated west of Yucatan, encompasses the Bay of Honduras with terraces and high mountains. It consists of mountainous and verdant plains of great extent, and 5000 feet in height. It is bounded on the west by a line of twenty volcanoes, subject to terrible eruptions, which frequently occasion violent earthquakes.

The *climate* is temperate on the high lands; but on the coasts, as in every country where heat and dampness are excessive, miasma of the most pernicious nature is developed, which renders it a very unhealthy place of residence for most of the Europeans, and even for the natives.

Vegetation. — Under the influence of a hot temperature and tropical rains, an extremely vigorous and exuberant vegetation is generated in the low plains. Forests of gigantic trees seek the pure air above an impenetrable thicket of less lofty plants, and the soil at the mouths of the rivers is overgrown with jungles, containing reeds, which are, it is said, as many as a hundred feet in height. On the plateau the vegetation of the temperate zone succeeds to perfection. Arid spaces are occupied by the *cactus*, that fleshy plant, from whose singular and prickly stalks issue flowers, usually magnificent, and which sometimes embalm the air with their perfumes; *pineapples* appear to be natives of these countries and of Mexico, whence they have been transplanted every where. *Sugar cane* and *maize* also grew wild in these places at the time of the Spanish conquest. A shrub of the sumac (*rhus copallissum*) species produces a resin celebrated under the name of *copal*, and which is used for varnishes. The *cacao* and *indigo* of Central America are very renowned; the latter is even esteemed the best in America. Tobacco and excellent coffee are also raised.

Animals. — Besides the domestic animals which have been introduced by the Spanish conquerors, and have multiplied exceedingly, a great abundance of animals of all kinds, and especially of game, may be met with in this country. They are principally *jaguars*, with their magnificent coat, and *cougars*, or *pumas* — formidable animals, which, owing to a certain resemblance to the

king of beasts, have been surnamed *American lions*, although they have neither mane, nor tufts of hair at the end of the tail.



Puma.

The puma often attains four feet in length. Its skin is of a dusky red, (whence the name of *red tiger of Cayenne*,) its neck and breast are almost white, its ears short and nearly black, its body long, its legs short, and its back hollow, like that of the horse. It rarely attacks man, but causes great ravages among cattle. It climbs trees like a cat. The other animals of this country are stags, deer, and roes, which devastate the plantations; *coyotes*, species of wolves, individually timid, but formidable when ravenous, or collected in bands, insomuch that one stands little chance of escaping them, even by seeking refuge on trees, as they can loosen the earth at their base and uproot them; hares, partridges, and heathcocks are encountered at every step. Nevertheless, the superstitious inhabitants of the country prefer to go without food rather than touch game. "We are poor, but Christians," is their reply to those who invite them to partake of it. We have already stated that noxious insects, and especially mosquitos, are one of the most terrible scourges of this country.

The *population* is composed of Spaniards, always embroiled in revolutions and civil wars, which ruin a country naturally very rich and fertile, and of Indians, for the most part continuing independent, and who often render themselves formidable to the whites. The Spaniards are Catholics, the rest idolaters, and enslaved to all kinds of superstitions.

PLATEAU OF ANAHUAC, OR MEXICO.—Whereas in the Andes of South America the plateaus are a species of high valleys, included between two branches of the great Cordilleras, in Mexico the whole interior of the country is an elevated level. And while in New Granada, or in Peru, profound, transversal, and perpendicular valleys prevent the inhabitants from travelling otherwise than on horseback, on foot, or borne on the backs of Indians, carriages can roll from one extremity of the Anahuac to the other, over an extent of several hundred leagues. The slopes by which one ascends the plateau are, it is true, rough and steep, especially on the eastern coast; but in the interior of the country none of the obstacles exist which are met with in the high countries of South America.

Climate.—The elevation of the different parts, of which the plateau of Anahuac is composed, is not every where the same. It varies from 4000 to 7500 feet. From these differences of level naturally result great variations in climate and productions. At the foot of the mountains, on the coasts, are the *tierras calientes*, or hot lands, rich in all the products of the tropics, but of a very unhealthy climate, and particularly exposed to the ravages of the *yellow fever*. On the declivities of the Cordilleras (from 3500 to 4500 feet in height) are the *tierras templadas*, or temperate countries, where a mild, spring-like temperature reigns perpetually, and where extreme heat and excessive cold are alike unknown. The *tierras frias* (cold regions) comprehend the mountains, and plateaus which rise to a height of above 6000 feet. Notwithstanding this denomination, the cold may be said to be scarcely felt on the plateaus; the winters, in fact, are generally as mild as at Naples, and the olive is successfully cultivated. “Although situated at the height of the hospice of St. Bernard,” says M. Ampère, “Mexico enjoys a delightfully temperate climate. But the situation of this city (the true centre

of the plateau) is unfavorable to persons possessing delicate chests, who can with difficulty breathe in so rare an atmosphere. The purity of the air is here, as in Egypt, accompanied by an extreme dryness. In summer rains are of almost daily occurrence ; but with this exception the climate of Mexico is extremely salubrious ; it is also very agreeable, because it never attains the extremes of heat and cold, and forms, in this respect, a perfect contrast to the sudden changes of temperature of the United States."

The *mines* of Mexico are celebrated throughout the world, on account of the prodigious quantity, if not of *gold*, at least of *silver*, which they have furnished since the discovery of America, and this country still holds the first rank in the production of this metal. The mines of *Zacate'cas*, *Guanaxua'to*, and *Guadalaxa'ra* are particularly renowned ; some of the richest bearings seem exhausted ; others, neglected during the civil wars of the commencement of this century, have been invaded by the waters, and the attempts of the English companies to resume the working of them have generally failed.

Vegetables. — Although a portion of the plateau of Anahuac is rendered unavailable by a deplorable aridity, unfortunately augmented by the negligence of the Spanish conquerors, who have constantly destroyed, without replanting, the trees, and who, by draining many lakes, have laid bare a great number of saline substances, whose influence has gradually extended over vast spaces, this country deserves to be reckoned among the most fertile in the world.

First among the Mexican vegetables which furnish an abundant alimentary substance ranks the *banana* ; it has been calculated that 1000 square feet of soil planted with 40 bananas readily produces, in a year, 4000 pounds weight of the fruit, whereas the same space sown with wheat yields only 30 pounds of grain. Much *manioc* is also cultivated, whose root affords an excellent farina, of which (as has been mentioned elsewhere) the *cassava bread* is made. These two plants, it is true, thrive only in the hot or temperate regions, on the two slopes of the Pacific or Atlantic Oceans. But on the plateau itself, in the valley of Mexico, which is qualified by a cold soil, although fire may be dispensed with throughout the year, *maize* is cultivated, which on

an average yields annually 150 grains for every one sown, and which under the form of *tortillas* (species of pancakes or cheese cakes) constitutes the staple article of food. Wheat generally yields from 25 to 30 fold; the potato, called in this country *papa*, grows in abundance on the plateau; the sweet potato and the yam in the hot region. The *pimento* bears a fruit as indispensable to the natives as salt is to the Europeans. Almost all the *vanilla* which is consumed in North America and Europe has long been exported from the environs of Vera Cruz, on the eastern side of the plateau of Anahuac. On the other hand, the *cacao tree* and *sugar cane* are now scarcely cultivated in Mexico, and *cotton* is almost equally neglected. The best chocolate is, however, made in Mexico, but the manufacturers are obliged to procure the cocoa from Guatemala, or from South America. *Pineapples, lemons, oranges,* and other fruits of the hot countries are found in great abundance.

Among the products wholly peculiar to Mexico, or which are



Jalap.

at least essentially indigenous, the jalap, oxalis, nopal, and agave should be principally cited. The *jalap* is a plant of the

bindweed (*convolvulus*) genus : its root, of the size of the fist, is of a brownish color, and of a bitter and nauseous taste ; the resinous principle which it contains is a very energetic cathartic, but rarely employed as a remedy on account of its severity. Its French name is a corruption of that of Xalapa, a city at the south-east of the plateau, from which this root was originally obtained. The *oxalis*, or *oca*, (*oxalis crenata*,) is a tuberous plant, which is also met with in the mountains of Peru ; its numerous tubercles, of a yellowish color, and of the size of a hen's egg, are palatable when cooked, and have a slightly acidulated taste. This plant has been cultivated in France and England within a few years, and constitutes an agreeable esculent. The *nopal* is a species of cactus, on which the cochineal insects subsist, yielding a beautiful scarlet or crimson color, and of which we have already had occasion to speak. The eggs of the cochineal are distributed over the nopal plants, and three gatherings of the insect are annually made. The cochineal was formerly obtained almost exclusively from Mexico, from the vicinity of Oaxaca, at the south of the plateau ; this cultivation now prospers in the islands at the north-west of Africa, in Algeria, and elsewhere. Another plant of a strange and gloomy vegetation, and which, with the nopal, particularly characterizes the Mexican plateau, is the *agave*, or *American aloe*, also surnamed *maquey*. It presents some analogy to the African aloes, except that it has only a flowery stalk, and no trunk. This vegetable is, on account of its numerous uses, one of the most precious gifts which a bountiful Creator has bestowed upon the Mexican people. In the first place, as it flourishes in the poorest soils, it is suitable for forming hedges, which its thick leaves, covered with prickly thorns, render formidable ; of the root, prepared with sugar, a conserve is made ; the leaves, in the form of grooves, are used for covering houses ; their thorns may be rendered useful as needles and nails ; the fibres which they contain are employed in the manufacture of common cloth and ropes ; bruised, and converted into pulp, they furnish a white paper, on which the ancient Mexicans were accustomed to write, in the same manner as the Egyptians made use of the papyrus ; from the broken stems of the leaves, as also from the stalk itself, if cut when it is in flower,

there exudes in abundance, during several days, a sweet liquor, which, after undergoing fermentation, takes the place of wine among the Aztecs, and constitutes, under the name of *pulque*, the delight of the Mexican nation. At Mexico the tables of the Europeans are the only ones where this beverage is not daily served. Thus, as one approaches the cities, he remarks vast fields where massive aloes are planted in quincunxes, with which neither those that are seen in Europe in the open air, nor even in greenhouses, could be compared.

The *animals* of Europe have multiplied prodigiously in this country; bands of wild horses may be seen roving in the plains of the interior; the oxen are also quite numerous in certain parts; but mules especially abound, and are very highly esteemed. Not long since, on the route from Mexico to the port of Vera Cruz, 70,000 of these beasts of burden were employed in the transportation of merchandise across the abrupt declivity of the plateau. The wild animals are not particularly remarkable: they consist of bears, many varieties of wolves, jaguars, cougars, deer, stags, a peculiar species of porcupine, and mephitic weasels, carnivorous animals, partaking of the nature of the polecat, and whose name (from the Latin *mephitis*, offensive odor) is suggestive of their singular property. These animals, when irritated, diffuse a liquid so powerful as to be almost suffocating; a single drop of it introduced into the eyes might destroy the sight, and when it comes in contact with clothing, it impregnates it with an odor which it is very difficult to remove.

Multitudes of birds of brilliant plumage enliven the forests. Many *vultures* may frequently be seen disputing their prey, even in the streets of the cities. The *Muscovy* or *Barbary duck*, and the *turkey*, were originally obtained from Mexico. The latter, become so heavy and stupid in a domestic state, exhibits, however, an uncommon degree of pride and vivacity in its wild state, in the midst of the vast forests of Mexico and North America; its plumage, of a beautiful brown with glittering reflections, is likewise much more brilliant; it is of larger size, and has somewhat the bearing and gait of the bustard.

The *population*, which is extremely mixed, is composed of *whites*; of Spanish origin and language; all Catholics, supersti-

tious, indolent, boastful, devoid of real courage, constantly involved in the confusion of civil wars, and incapable of maintaining



Turkey.

any degree of peace and security, or even of defending themselves in certain provinces against the independent Indians. Brigands infest all the highways ; they rarely assassinate defenceless travellers, contenting themselves, generally, with robbing them. The latter, indeed, provide themselves with escorts, but they usually ride at such a distance that they only arrive at full gallop just in time to see the bandits make their escape after having possessed themselves of their booty. In a word, this is a race which seems to be sinking into complete decay.

The *Indians* form the mass of the *population* ; in the country they compose it almost exclusively ; they are the peasants of Mexico ; under the name of *pawns*, or pledges, they are employed in performing all the labors which were accomplished by negroes before the abolition of slavery. They only pledge themselves for a year ; but soon contracting debts upon debts towards their patrons, they can only recover their liberty by the payment of these obligations ; this situation is worse than slavery, and if they become sick they are far more neglected than the negroes. The skin of the Mexican Indians is of a disagreeable dusky yellow, exactly the color of gingerbread, and differing sensibly from that of the Indians of the United States. They have smooth and flat

hair, thin beard, large lips, and a mild expression about the mouth, which contrasts with their otherwise sombre and severe countenance. They are of a nature habitually tranquil, but capable, in an emergency, of courage, and even of ferocity. Those of the interior preserve superstitions whose origin may be attributed to the ancient religion of their fathers. They are usually grave, melancholy, and silent: this gravity is especially remarkable among the children, who, at four or five years of age, display much more intelligence than the children of the whites. A distinction should, however, be made between those Indians converted to Catholicism, and surnamed *faithful Indians*, and those who have continued savages, and are known under the name of *Indian bravos*, incessantly at war with each other, or with the whites. The most formidable are the *Camanches* and the *Apaches*, who wander in the plains and mountains of the north of the plateau.

The *mestizoes*, descendants of the whites and natives, are quite numerous: besides which are found a small number of *mulattoes*, the progeny of a white father and negro mother, and *zamboes*, or *chinos*, the offspring of negroes and natives. But few negroes have been introduced into Mexico.

PLATEAU OF NEW MEXICO. — North of the Plateau of Anahuac, between the two chains of the Sierra Madre and the eastern Cordillera extends *New Mexico*, a very long and narrow plateau, and but little known, isolated as it is from the neighboring countries by high mountains, and by immense deserted plains.

The *climate* is of a rare salubrity. "Nowhere," says a traveler, who has resided in this country during nine years, "is a purer atmosphere to be found. In summer the inhabitants experience no excessive heat, and in winter no sudden changes of temperature. M. De Humboldt was then mistaken in his supposition that the principal river of this country (the Rio del Norte) was sometimes covered with ice so thick that it could be traversed with horses and carriages. This country is sheltered from fogs and dampness; it scarcely rains there once a year, and in some years not at all.

It has been stated that there were formerly in New Mexico rich *gold mines*, but that the Indians, irritated by the cupidity of

the Spaniards, have so successfully concealed the traces of them that they cannot now be recovered. Some, however, are still explored.

The *soil* is interspersed with fruit and cotton trees; fields of wheat and tobacco plants. In the valley of the Rio del Norte there exist vines whose products are highly appreciated, although the excessive indolence of the inhabitants prevents their giving sufficient attention to any species of cultivation.

The *animals* and *population* are the same as on the plateau of Anahuac; as the latter are very thinly scattered over an immense territory, they are peculiarly exposed to the invasion of the Apaches and other wild Indians, who, suddenly surprising the villages, kill the men, carry off the women and children, and speedily regain their mountains or deserts, conveying with them, on their fleet horses, all the spoil of which they have been able to possess themselves.

PLATEAU OF NEW CALIFORNIA. — West of the Rocky Mountains stretches the plateau of *Upper* or *New California*. The eastern part, called *Utah*, is still but little known, and seems to be chiefly composed of desert plains, where scarcely any vegetation is encountered except in the vicinity of the occasional streams, mostly tributaries of the Rio Colorado, which flow into the Gulf of California, or on the borders of the Great Salt Lake, at the north-east. Near this lake the Mormons have located themselves — a new sect, distinguished of late years by the singularity of their doctrines, and especially by the establishment of polygamy among them.

The western portion is now very well known, particularly that which lies between the coast ridge and the Sierra Nevada, two almost parallel chains, which appear to unite at the south with the mountains of the peninsula of California, and at the north with the Cascade range. Between these two chains in the double valley of the Sacramento and San Joaquin, (two rivers, which flow in opposite directions, one south and the other north, and pouring their waters into the magnificent Bay of San Francisco,) in the bed of the streams which descend into these rivers, have been found, since 1848, that incredible quantity of scales and lumps of gold which have rendered California so

celebrated. Discovered by Captain M. Sutter, these rich repositories were immediately invaded by multitudes of adventurers from all countries, even from China, who commenced digging, collecting, and grinding the sands, mixed with quartz, and extracting from them the fragments of gold by washing. From this



Gold Washing.

period, in spite of the most toilsome and discouraging labors, in spite of the dangers to which the gold seekers have been exposed at the hands of the Indians, the exploration of these mines has not ceased to extend and increase in importance. The total amount of gold produced and distributed in all directions, down to the close of 1854, is estimated at \$298,243,938; and there seems to be no indication that this vast source of riches is becoming exhausted.

Vegetables.— Building woods abound in this country; the most precious belong to the cone family, (pines, firs, &c.) Certain *pines*, among others, attain prodigious dimensions, 300 feet in height and 20 feet in diameter. The species which has been surnamed *wellingtonia* is certainly one of the principal wonders of the vegetable kingdom. These beautiful trees grow on the Sierra Nevada, at an elevation of about 5000 feet; the age of certain specimens has been estimated at more than 3000 years, and they equal in size the enormous baobab; with this difference, that instead of having, like the latter, a hollow trunk, and a stalk

of but little elevation, the wellingtonia attains a height of 250, and even 300 feet, and presents a solid body of wood. The trunk of one of these trees, cut at five feet above the ground, measured in diameter 29 feet at the base of the stem, and 200 feet higher a diameter of five and a half feet. A portion of this trunk, excavated in such a manner as to form a hall, and provided with a carpet, piano, and seats for 40 persons, was found capable of containing at once 140 children, in the metropolis of California, San Francisco.

Among these pines there are some whose cones contain sweet and oily kernels, of which the Indians make use as food during several months of the year, and from which they obtain an excellent farina. Some of these cones are as large as sugar loaves, but those of the ordinary size yield the best kernels.

California generally presents, at least in the valleys, a fertile soil, abundant in pasturage.

The grains and fruits of Europe have succeeded there; agriculture, at first neglected for the mines, has recently acquired a considerable increase.

Animals. — Before the discovery of the gold mines, the valleys of California contained immense herds of oxen, troops of wild horses, many stags, deer, and antelopes; the only formidable animal was the grizzly bear, which might often be seen mounted on oak trees, throwing sweet acorns to its cubs; the rivers swarmed with enormous salmon. The sudden increase of population has completely changed this state of things, and if the domestic animals are still numerous, the wild ones have almost entirely disappeared.

The *population* is a confused mixture of all races and nations; the European jostles the Chinese, the North American him of the south; all civilization, all languages, all religions, and also every species of misery and vice are there represented; but the North Americans, who predominate in number, have, in a manner, imposed upon themselves the obligation of providing for the religious wants of this yet disorganized society, and they have already erected many temples and schools; the Catholic church has also made praiseworthy efforts in the same direction. This population is, however, annually increased and modified by immigration.

PLATEAU OF OREGON. — North of California, between the Rocky Mountains and the Pacific Ocean, lies the *plateau of Oregon*, a vast territory, traversed from north to south by chains of parallel mountains, which divide this country into many terraces, very different in climate, nature of the soil, and productions.

Their *aspect* is extremely diversified; here the soil is barren and sterile, there covered with beautiful prairies and noble trees, elsewhere bristling with naked mountains and frightful rocks.

Climate. — The most remarkable characteristic of this country is the mildness and equality of its temperature. Neither rigorous winters nor the oppressive heats of summer are known there; nor, moreover, the sudden and capricious changes of atmosphere which may be observed under the same latitude in the eastern part of North America.

The summers are dry in the vicinity of the coast, but the heat of the sun is mitigated by the sea breezes; on the other hand it rains there uninterruptedly, from the month of October until the month of April. On the second terrace the rains are less severe, and continue only a few days in the autumn and at the commencement of spring; the cold, however, makes itself but little felt, and the snow melts as it falls. On the terrace which is at the foot of the Rocky Mountains, the climate becomes more rigorous, although much less so than at the same height on the eastern declivity of these same mountains. The mildness of the climate of California and Oregon is attributed to a counter current of warm water, proceeding from the coasts of China and Japan, and which is, in the Pacific Ocean, the counterpart of the Gulf Stream of the Atlantic, which conveys to Europe the heat and moisture developed in the great equatorial current.

Vegetation varies according to the situation of places; beyond the valleys, the country preserves its general character of sterility; but on the borders of rivers the soil is very fertile, and the forest vegetation of unparalleled beauty. In certain places the grass rises even to the body of a horse. The portions recently subjected to cultivation by the new colonists produce abundant crops of wheat, potatoes, and onions of prodigious size, as also other excellent vegetables. The dimensions of the trees of Oregon

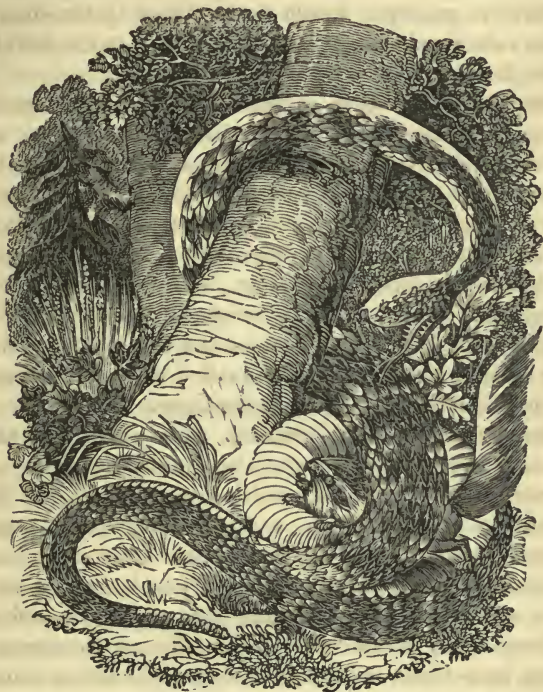
are likewise enormous; all travellers have commented upon certain pines, which are almost as gigantic as those of California; but these trees, growing in the midst of a constantly humid atmosphere, generally yield a soft and spongy wood. In order to improve its quality, it should be hardened by the absorption of certain saline and metallic liquids, according to the skilful process of Dr. Boucherie.

Previous to its being cultivated, this country furnished the natives with scarcely any useful plant, and the chase was their only resource. In the favorable season, they could, however, collect certain berries and wild fruits, among others those of the plum and cherry trees; mosses, which, boiled during three days and three nights, supplied them with a nourishing species of jelly; *kammas*, resembling onions, and which after being well cooked and reduced to paste became a winter store; and the *kinnih-kinnih*, the second bark of the red willow, which, after being crisped before the fire and rolled between the fingers, was used by the inhabitants instead of tobacco.

The *animals*, on the contrary, were extremely numerous, especially the fur-clad animals, whose skins gave rise to a considerable commerce, which is every year diminishing. Nowhere, perhaps, in North America, are found such great numbers of *rattlesnakes*, the most dangerous of venomous serpents. Their bite, indeed, entails terrible consequences, both from its serious nature and from the promptitude with which it manifests itself, and death is the almost inevitable result. A menagerie keeper, having been bitten at Rouen, had the courage to immediately sever, with the blow of an axe, the finger which had been attacked; but it was in vain: a few minutes later he sank under the effects of the absorption which had already operated.

The *rattles* consist of a variable number of capsules, embedded one within another, and which, dry and movable, produce, when the tail is rapidly agitated, a noise similar to that of the pods of dried leguminous plants. This noise is not very loud, but may be heard at about thirty paces' distance, and the animal creates it whenever any thing occurs to disturb it. Thus is afforded a kind of providential warning, which reveals to other beings the presence of this terrible reptile, and which, owing to the slowness of

its movements, often enables them to avoid it. As the rattlesnake principally inhabits dry and arid places, man is rarely exposed to its attacks. They seldom bite without provocation. Men affirm



Rattlesnake.

to have more than once escaped them by throwing snuff in their eyes and mouth.

The *population*, still inconsiderable in number, will soon be composed solely of white colonists. The Indians are rapidly diminishing, in consequence of drunkenness, small pox, and continual wars.

PLATEAU OF BRAZIL.—South America possesses only a single plateau, exclusive of the series of high countries formed by the rising of the Andes; this is the *plateau of Brazil*, a vast

triangle, whose boundaries are only imperfectly known to us, and whose base skirts the Atlantic coast resting on the Serra do Mar.

The *aspect* of this plateau varies perceptibly from one extent of territory to another. In the vicinity of the Serra do Mar and the Serra do Espinhaço is found the region of virgin forests, remarkable for the luxuriance of an exuberant vegetation, the marvellous size of the trees, and the deep shade and silence which pervade them, undisturbed save by the roaring of wild beasts or the songs of birds. Farther west stretches the region of the *Campos*, an immense extent of plains, sprinkled with rounded hillocks, covered only with a grayish grass, and among which are found, scattered here and there, especially in the hollows, clumps of deep-green woods. A sandy soil, the want of springs, or the drought, and the winds which blow violently in the Campos, account for the absence of vigorous vegetation. Still farther west are the *Campos Parecis*, north of the Serra dos Vertentes, (province of Matto Grosso,) forming a sandy desert of unknown extent, and similar, it is said, to the Great Gobi, or the plateau of Thibet.

Climate.—The year is divided into two entirely distinct seasons—the rainy, which commences in September, and the dry, commencing in April. Often, during the continuance of the latter, not a single drop of rain is known to fall, the grass of the fields is seared, and an insupportable heat is experienced; a dry wind irritates the nerves and chaps the lips, and no one can with impunity go abroad without an umbrella. The nights, however, are of delicious freshness, and often even cold.

The *minerals*, as we have already had occasion to remark, are of great importance in these countries; they are principally diamonds and gold, which are often collected in the same sands, and by the same process of washing, unless the quantity and value of the diamonds cause the gold dust to be overlooked, which, however, very rarely occurs. The presence of this precious stone is recognized by that of certain flints, which usually accompany it, and which are called the *slaves of the diamonds*. These rich deposits, by causing agriculture to be neglected in most of the central provinces of Brazil, have become the origin of idleness, misery, and demoralization.

Vegetation. — No language can describe the glory of the Brazilian forests. The largest trees bear brilliant flowers; scarlet, purple, blue, rose color, and golden yellow blend with every possible shade of green. Majestic trees contrast with the graceful *palm*, of which more than 80 different species are estimated in Brazil, from those which scarcely possess any trunk to those which measure more than 130 feet in height; or with the *arborescent ferns*, the creeping *passion flowers* and *convolvulus*, some of which, as thick as cables, climb to the tops of the trees, hang downward to the ground, and rising again, extend from branch to branch, adorned with their own leaves and the superb flowers of the *orchideæ*, parasitic plants, which nowhere present more brilliancy or variety.

The vegetation of the Campos is, on the contrary, extremely monotonous. The thickets are often composed entirely of the *araucaria of Brazil*, a magnificent tree, which is a worthy representative of the genus of our pines and firs. This is a most picturesque plant, remarkable especially in its adult state for its perfectly erect trunk, with branches in the form of candelabras, terminating, so to speak, in an immense and perfectly even platform of a dark-green hue. The wood, white, marked with very delicate veins of a vinous rose color, is harder, heavier, and more compact than that of our pines. Its cones, or fruit, as large as the head of an infant, contain seeds almost half as long as the finger, resembling the chestnut in taste, but more delicate. This tree flourishes in sandy soils, and indicates the places least suitable for cultivation. The grass of the Campos is usually set on fire at the time of the drought; it is even customary to divide into four portions the pastures designed for the milch cows, and every three months to set fire to one of the portions, in order to procure for these animals a fresh herbage — a fine and very beautiful green grass, which somewhat resembles wheat when it first shoots from the earth. As the fire consumes the grass of the pastures with great rapidity, it does not burn the trunks of the trees that are interspersed among them, but merely dries their leaves, which are soon replaced by others.

Considerable portions of these plateaus have been devoted to cultivation. The system of agriculture is unfortunately that

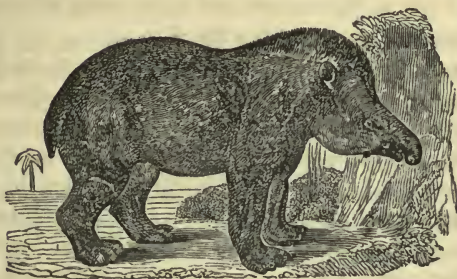
which has been generally adopted throughout Brazil. Instead of clearing the woods, the inhabitants set fire to them, and sow in their ashes; after a few crops they suffer the wood to grow again, which they burn in like manner, until the earth, refusing to produce any thing but grass, is abandoned.

There are, however, very fertile soils, where maize yields 200 fold, and kidney beans from 40 to 50 fold. According to localities, the earth produces, in greater or less abundance, maize, manioc, rice, kidney beans, and other legumes, tobacco, cotton, sugar, and coffee; but the latter is often blighted by the frost, which is a proof of the elevation of the soil. Beach trees, which bear no fruit on the borders of the sea, (at Rio de Janeiro,) yield abundant harvests in the mountains; while the dwellings in the eastern part are habitually surrounded by bananas, wheat also succeeds in the high places.

The *animals* are not the least important portion of the productions of the Brazilian plateau. The natural pastures of the Campos, for example, feed numerous herds of horned cattle, which might be turned to great account, if communications with the ports of the eastern coasts were not obstructed by the abominable condition of the roads. The extremely high price of salt is also an obstacle to the cattle breeders. They supply this deficiency in certain places by conducting the droves from time to time to mineral springs, for which the latter seem to have a very keen thirst. Sheep are also raised, both for the wool and the flesh; but as no pains are taken to guard them, they are often scattered and destroyed by wild or domestic dogs. Mules are much more employed than horses; considerable numbers of swine are raised in different places, whose lard is to the Brazilians what butter or oil is to us.

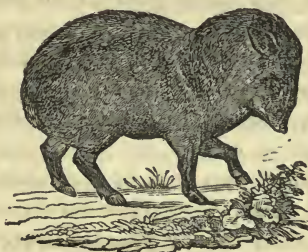
Wild animals do not appear to be very abundant, especially in the Campos; and for more complete details we would refer the reader to the article upon the plains of Brazil. The principal are *jaguars*, or *ounces*, extremely and universally feared, *pumas* and *tapirs*, of which we have already spoken in connection with Indo-China, a species of wild hogs, whose upper lip, elongated in the form of a proboscis, has won for them the surname of *American elephants*. The size of this animal sometimes exceeds that

of the ass, and it was the largest quadruped of South America at the period when this portion of the new world was discovered.



Tapir, or American Elephant.

Its flesh is hard and tough; the savages, however, eat it; but that for which this animal (now become rare) is especially prized, is its skin, which, when dry, is so thick and hard that bucklers are made of it, which are impenetrable to arrows. The *peccari* is peculiar to South America, finding retreats in hollow trees or rocky caves. This is one of the best species of game furnished by this country. The glands which the peccari has on its back exhale at all times, but especially when irritated, a disagreeable odor, similar to that of garlic, which betrays its pres-



Peccari.

ence. If this excrescence is not speedily removed after the animal is slain, the flesh is so impregnated with this flavor that it cannot be eaten. They defend themselves courageously,

and bite desperately; they are not, however, difficult to tame. A whitish band, which descends obliquely from each shoulder, has obtained for one of the species the name of *necklaced peccari*.

The *population* is composed of *Indians*, whose number is gradually diminishing, and who are scarcely formidable. Many live in a state of almost complete nudity. Their skin is brown, their figure broad, flat, and almost square; their eyes a little elevated at the outer angles; their hair, which is straight and black, is cut square over the forehead, and hangs loosely over the shoulders; their body is usually tattooed or painted; their weapons consist of a bow and arrows. They are, for the most part, idolaters. The *white* or *mulatto population* are generally incurably indolent and slothful, abandoned to the most shameful ignorance, and according to the statement of a distinguished traveller, (M. Aug. Saint Hilaire,) "substitute for religion absurd superstitions: these people believe in sorcerers, ghosts, spectres, and familiar spirits, concerning which they relate a thousand absurdities; they wear on their necks amulets and talismans. Reared amid an almost total absence of religious sentiments, the children," continues this same traveller, "are early corrupted; they are never seen playing together, and are alike destitute of gayety and innocence. Youth presents a still sadder spectacle, and knows only guilty pleasures; arrived at manhood, they are characterized by torpor, ennui, and the love of brandy sweetened with sugar. Most of the inhabitants being too poor to obtain from the clergy a marriage license, for which they are obliged to pay 75, 115, and even 135 francs, remain unmarried, and lead disorderly lives. And the priests themselves," affirms M. Saint Hilaire, "authorize by their guilty deportment the excesses of the simple believers." This is one of the most corrupt populations of South America.

SECT. 6. PLAINS OF AMERICA. — PATAGONIA. — This name is given to the country which, at the southern extremity of America, extends between the Andes and the Atlantic Ocean as far as the Strait of Magellan. This country, very little known to civilized nations, is generally composed of cold and arid plains, destitute of forests and cultivation, but not absolutely sterile, as

much excellent pasturage is there met with. In many places the ground is covered with incrustations of salt as white as snow; near the sea are found many lagoons and salt marshes. In the western portion only, at the foot of the Andes, the country loses its gloomy and monotonous aspect, and is clothed with thick forests; elsewhere little is encountered but stunted trees or thorny bushes.

Climate. — This inhospitable country, incessantly swept by the icy winds from the Andes or the polar seas, is almost throughout the year subjected to extreme cold, much more intense at the south of the southern hemisphere than in the northern hemisphere at an equal latitude. On the other hand, the heat is excessive during the summer months. The air is, however, quite dry and serene on the eastern coast, whereas in the western region the rains are almost continual.

Animals. — These plains, although of such meagre vegetation, nourish (especially towards the north) a great number of oxen and wild horses, hares, foxes, guanacos or wild lamas, and the *struthio rhea*. This bird, one of the most beautiful of South America, is often designated by the name of the *American ostrich*, although it is scarcely half the size of the African bird, and it has three toes instead of two. They live only in the open plains, and usually go in pairs, sometimes in numerous troops. Their wings are too short to enable them to rise above the ground, but they prove available for augmenting the rapidity of their course, which is such that they can scarcely be overtaken even with good horses. They subsist on seeds and grass; the females hatch 16 or 17 eggs, unless several of them unite to hatch together. They may be tamed without much difficulty, and it has been seriously proposed to acclimate them in European poultry yards.

Population. — The *Patagonians* are half-savage Indians, who excited the admiration of the first voyagers by their lofty figures, and whom the exaggerations of rumor had soon constituted a race of giants. It is true that they are generally of great stature, being ordinarily six feet in height, and sometimes seven; their shoulders are broad, and their constitutions vigorous; they have long, black, rough, and coarse hair, prominent cheek bones, and sooty skins. They have no other houses than tents of guanaco

skins, and lead a nomadic and miserable life, often a prey to hunger, devoured by vermin, and covered with revolting filth. They frequently descend upon the white colonies for the purpose of seizing and carrying away their cattle, and especially their horses. They are excellent riders, and subsist principally on the hunt of the ostriches, and more especially of the guanacos, which they capture by means of the *bola*, or *lasso*. The *bola*, as its name indicates, is a ball attached to the end of a long strap: the rider dexterously flings it in such a manner as to interlace the feet of the animal, and cause it to trip. The *lasso* (noose) is a very strong band of leather, one extremity of which forms a noose, or slip-knot, which the rider, mounted on horseback, casts so adroitly around the neck, horns, or legs of the animal, that he scarcely ever misses his aim; the entangled animal runs, until suddenly arrested by the strap, (the other end of which is attached to the saddle of the horse,) when it is precipitated on the ground. The Patagonians comprise many tribes, which differ very sensibly in respect to complexion, size, and manners. They are generally rather pacific than malicious, and although well armed with lances, bows, and arrows, they rarely attack the mariners who disembark on their coasts. If they perceive a vessel approaching the shore, they flock thither only to beg brandy and tobacco, of which, like all savages, they are passionately fond. Vague and gross superstitions constitute their religion.

THE PAMPAS OF LA PLATA.—North of Patagonia, between the Andes and the mountains of Brazil, are plains of immense extent and of the most striking aspect, known under the general name of *Pampas of La Plata*. They comprise, in the southern part, the *pampas*, so called, a species of Asiatic steppes, covered with reddish earth and a coarse turf, smooth as the sea, without a stone or bush, interrupted only here and there by moving sands, marshes, and rivers, freighted with salt. On all sides extend a boundless horizon and a monotonous uniformity which profoundly sadden the beholder. At the foot of the Andes the soil shelves so little that many rivers there find no outlet, which at the time of high flood gives rise to the formation of lakes or lagoons of considerable extent, and to inundations which cause the destruction of thousands of cattle. Towards the north-west

is the Great Chaco, a vast desert of sand, covered with cactuses and aloes ; at the north-east, on approaching the Brazilian Mountains, forests of incalculable extent are encountered.

The *climate* is generally temperate and very salubrious ; thus the first explorers bestowed upon the country the name of *Buenos Ayres*, (good air, or good airs,) which its principal city still retains. In summer, however, the heat is often excessive, while in winter (that is to say, in June, July, and August) the cold south winds are so severe as to freeze the surface of the water ; sometimes, also, at this season, the hurricanes are terrible ; rain descends in torrents, accompanied by fearful thunder and lightning ; nevertheless snow is rarely seen at Buenos Ayres.

The *vegetation* varies much in different localities. The soil of the pampas is sandy, and in many places incrustated with salt and saltpetre. It would generally be susceptible of cultivation, and these plains, so thinly sprinkled with towns and villages, might maintain an immense multitude of inhabitants. For a considerable distance west of Buenos Ayres, the soil is completely covered with grass, trefoil, and also with thistles, introduced from Europe, and which often rise ten feet in height, forming thickets so dense and thorny that they are almost impenetrable. Farther west, the pampas are clothed with long and beautiful grass, blended with magnificent flowers, and furnish an inexhaustible nourishment to thousands of cattle. At the foot of the Andes are thick copses of thorny bushes and dwarf trees, intermingled with ravines and rocks.

The beautiful plains of the central portion produce, in abundance, in the cultivated districts, maize, wheat, barley, olives, cotton, tobacco, manioc, coffee, sugar, and indigo. The grains and fruits of Europe succeed perfectly, especially peaches, but they degenerate very rapidly. Even here, agriculture has generally been neglected for the rearing of cattle, the principal wealth of these countries.

The forests of the northern part contain fine timber or dye-woods ; also many palm trees ; the *algaroba*, a species of acacia, which produces clusters of berries of which the Indians make bread ; as likewise a strong fermented liquor ; and the *yerbamate*, or *Paraguay tea*, a kind of holly, (*ilex paraguayensis*), whose

young stalks and small leaves are universally employed in South America, like the China tea, in the decoction of a beverage. In the city of Montevideo (east of Buenos Ayres) and on the coasts of Brazil the *maté* is usually drank from a calabash, or small, oval gourd ; it is imbibed through a pipe, or small tube of tin, silver, or gold.

The *animals* are, however, the most striking feature presented by the vast plains surrounding the River La Plata. The *horses* and *horned cattle*, which were originally introduced by the Spanish conquerors, have since multiplied prodigiously, and become more or less wild. The horses are sometimes encountered in troops of more than 10,000. Each stallion gathers around itself a certain number of mares and young colts, which it jealously watches and courageously protects. During the day these families unite to feed in common ; but every evening the males reassemble their little band, and with it seek their retreat for the night. Each troop interdicts the approach of foreign hordes to its domain ; if the fodder becomes insufficient, all take up their march under the conduct of their chiefs. These thousands of horses traversing boundless plains, and shaking the ground beneath their cadenced trot, present an admirable and terrible spectacle. Preceded by scouts, they move in close columns, which nothing can sunder. The column is subdivided into squads, each composed of a male and a certain number of females. If the vanguard announces the approach of a caravan or body of cavalry, the males which are at the head immediately detach themselves, advance to meet the enemy, and then, at the signal of one of them, the whole band set forth in the direction indicated by heavy and prolonged neighing, inviting the domestic horses to join them ; and indeed, unless travellers speedily secure the latter, on the approach of the *alzados*, they will assuredly make their escape. Even horses which have been previously tamed, and belong to a proprietor, will soon become almost wild again ; and when their services are in requisition, he can only capture them by the aid of a good horse and lasso, in the same manner as he would pursue the wild horses. Wild oxen are so numerous and of so little value in the pampas, that they are generally killed merely for the sake of their hide, horns, and tallow ; for although the flesh constitutes

almost the sole food of the shepherds of these countries, so little account is made of it that it is often abandoned to beasts of prey. In certain places, however, this meat, cut in thin slices, is dried in the sun, and afterwards exported to other countries. These oxen, as well as the hogs which range in companies in the forests, are also caught by means of the bola and lasso.

The horned cattle are to the inhabitants of the Pampas what the reindeer and camel are to the Laplanders and Arabs; the flesh is the basis of their food; the skins are exported, and this exportation amounts in some years to more than a million hides; of the horns are made vases, jugs, pitchers, combs, and spoons; of their leather, cordage, mattresses, and huts; the fat is used in the preparation of food; soap and candles are made of the tallow; the bones serve for firewood in many places where the latter is wanting, and they are made to blaze by means of tallow; the skulls answer the purpose of chairs in the country houses. After the example of the German and Scotch colonies established at the south of Buenos Ayres, the inhabitants are beginning to make use of the milk for the manufacture of butter and cheese. Unfortunately the herds are constantly harassed by *wild dogs*, which have multiplied to such a degree that expeditions have often been undertaken for destroying them. These dogs, from fear of the jaguars, always move in numerous bands, conducted by the old males. They seem to yield obedience to a species of discipline, and to have a mutual understanding for defending each other, and for pursuing, attacking, and afterwards devouring game. But once taken in snares, or otherwise, only a few days are required for them to become accustomed to servitude, and even attached to their keeper.

Besides the American ostrich, the open plains of these regions contain a certain number of remarkable animals. Such, for example, is the *viscacha*, also named *tucutuco*, on account of a very sonorous note to which it gives utterance during every moment of the day. This is a quadruped of 6 or 12 pounds weight, almost as large as the badger, with a thickset body covered with long and soft hair. This animal, which subsists on the roots of plants, possesses somewhat the habits of the mole or rabbit. A little below the surface of the ground, the viscaches dig vast burrows,

with numerous galleries and spacious storehouses, which they stock with grass and provisions for the inclement season. These burrows are united and grouped together like the houses of a village, and the viscaches may be seen issuing thence in great numbers as soon as the sun has set. Considerable spaces are so completely undermined by these animals, that they become positively dangerous to riders. The viscaches are in these countries what the warrens are to the Europeans; for the flesh of these animals furnishes excellent food, and their hair serves also to make very good hats.

With these quadrupeds we naturally couple the *agoutis*, pretty animals which represent in South America the European hares and rabbits, both in their gait and habits, and in the quality of their flesh, which is esteemed excellent game. They exist rather in the forests at the north of these plains than in the pampas, properly so called, subsist on barks and fruits, and retreat into the trunks of hollow trees. They are easily reared in captivity, but never lose their natural timidity.

In these same forests of the northern plains of La Plata, or *Paraguay*, not only jaguars, pumas, stags, deer, and monkeys of various species are met with, but also the wild cat, known under the name of *pampa cat*; a species of wolf-dog with a mane, which lives alone by itself, swims well, and hunts small game, but is not a dangerous animal, as it is less bold than the wolves of the north, and does not attack cattle; the *tapir*, of which we have recently spoken; and the *tatons*, whose head, body, and tail are alike covered with a hard and scaly buckler, with small compartments resembling paving stones. The flesh of these animals is very delicate, and they are the objects of an active chase. For self-defence they roll themselves up in a ball like the pangolin, but the teeth of dogs and carnivorous animals easily find entrance between the different divisions of their buckler. They are, moreover, very mild and inoffensive creatures, which seldom go abroad except at night in search of food, living habitually in burrows, which they dig with the greatest rapidity, whenever they are under the necessity of concealing themselves from their enemies. Other animals, known by the name of *armadilloes*, differ but little from the *tatons*. Another quadruped of these regions, which,

like the preceding, belongs to the great family of the edentata, but is not in like manner protected by a scaly cuirass, is the *anteater*. This animal, of the size of a large dog, low on the legs, of



Anteater.

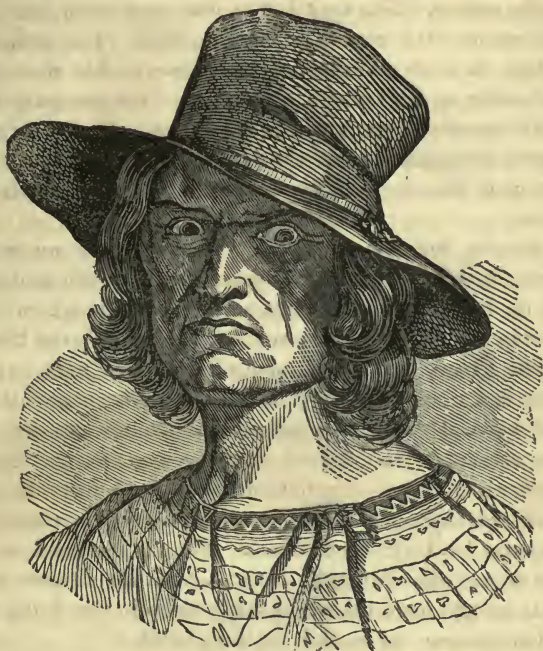
a brown color, with a black oblique line bordered with white on each shoulder, is remarkable for its large tail covered with long black hair, and especially for its slender and elongated head, terminating in a long, rounded muzzle. When, after the manner of the pangolin, it has with its claws effected an opening in the dwelling of the ants or termites, it protrudes from its muzzle a tongue, of the size of a quill, and more than a foot long, which it introduces into the aperture; then, moving it in every direction, and writhing it like an earth worm, it suddenly withdraws it, and swallows the ants which have been retained by its glutinous saliva. This is also a peaceable animal, which lives solitary, issues only by night, and greatly fears the light of the sun, to protect itself from which, it endeavors, it is said, to make its bushy tail serve the purpose of a parasol; it moves clumsily, does not climb trees, but with its powerful claws defends itself valiantly against its enemies, even the jaguar. Taken young, it is susceptible of being tamed.

The *population* is composed of *whites*, of Spanish origin, of *Gauchos*, or *Mestizos*, of white and Indian blood, and of Indians. The whites, or Spaniards, chiefly inhabit the cities; they have generally a muscular figure; their well-formed limbs indicate vigor; they are fond of wearing garments of brilliant colors, and

their vest buttons are usually silver ; their large black eyes seem to emit fire, their teeth are white as ivory, and a smile of self-satisfaction constantly wreathes their lips. The whites form scarcely a fourth part of the population ; some among them possess in the country farms very distant from each other, and always fortified against the attacks of the Indians. The proprietors, even those in moderate circumstances, own no less than 50,000 head of cattle, which wander at random in the pampas ; 10,000 or 20,000 constitute but a trifling possession. The Gauchos are almost all shepherds. They have enough European blood in their veins to esteem themselves very superior to the Indians, of whom they are deadly enemies. Left to himself from his infancy, the Gaucho mounts his horse at the age of four years, and aids his parents in driving the cattle to pasture. In youth, the Gaucho, always on horseback, passes his time in the ostrich or jaguar chase, or in endeavoring to capture wild horses with the lasso and break them to service. Indefatigable in his expeditions, he spends the night in the open air, with no other covering than his cloak, no drink but water, and no other food than a slice of beef. Thus his constitution becomes inured to the severest fatigue, and enables him to accomplish incredible distances on horseback. Upon rising in the morning, his first thought is of his courser ; he springs upon his back, bends him to all his whims and caprices, and can do nothing without him. If, indeed, he happens to pass a church, he will, perhaps, pause a few moments to listen to the priest, but does not set his foot on the ground.

Proud of his independence and physical superiority, the Gaucho little heeds the misery which invades his dilapidated cabin, the disorder which reigns there, and the filth which is exposed to view. Accustomed to slaughter animals, he quite as readily slays his fellow-man, but always in cold blood, and without anger. Race courses for determining the merits of the horses form the principal recreation of his indolent and aimless life ; the frequenting of taverns, and games of cards, together with the pleasures of revenge and political revolutions, constitute his chief passions. When engaged in play, the Gauchos are usually seated on their feet, having their long knife, from which they are never separated, stuck in the ground at their sides,

always prepared to use it against those who presume to cheat or provoke them in any manner. These species of American Tartars, strangers to all instruction and to all true civilization,



Gaicho.

have, however, the virtue of savages—hospitality. They also possess sagacity, as likewise an extraordinary development of the organs of the senses.

Every Gaicho is capable of following a track. In the midst of the vast plains, where roads and paths intersect each other in every direction, and where the cattle roam at will, he can distinguish the trail of an animal among a thousand; he can assure himself by the footprints of a horse whether he is wild or domesticated, loaded or unloaded, and can determine the time of his passage. If a theft has been committed under cover of the

night, and the *rastreador* is summoned the next morning, he will unhesitatingly pursue the footsteps of the thief across the paths and plains, cross or ascend the rivers, and arrive, in spite of obstacles, at the house of the man, whom he will at once stigmatize as the culprit. The Gauchos are the most terrible and active instruments of the incessant revolutions, which overthrow, demoralize, and ruin the unfortunate republics of Rio de la Plata. They belong, as also the whites, to the Catholic religion; but judging from the picture portrayed by travellers of their general manners, it would seem that the priests enjoy very little consideration, and that the religious sentiment exercises but a feeble influence.

As for the *Indians*, now greatly diminished in number, and belonging to many different tribes, some are subjugated, converted to Catholicism, and devote themselves to agriculture or the rearing of cattle; others, such as the *Puelches*, or *Pampas*, pass their lives on horseback, and are occupied solely with war and plunder. They are very dexterous in the use of the *bola*, go almost naked both winter and summer, and detest every thing which pertains to civilization, except strong liquors, for which they are always ready to rob themselves of every thing, and which, by enfeebling their constitution, often occasion the premature termination of their existence. The famous missions of the Jesuits among the Paraguay Indians, so much discussed within the last century, have had no lasting results in the civilization of these unfortunate tribes, and the population of the copper race has continued to diminish gradually.

MARITIME PLAIN OF BRAZIL. — The *maritime plain of Brazil*, at first extremely contracted between the Serra do Mar and the coast, gradually widens in proportion as we advance northwards, towards the mouth of the Amazon River. Few countries present such richness and variety — magnificent plantations side by side with primitive forests; and tribes of Indians, still cannibals, bordering, so to speak, upon flourishing cities, teeming with the luxury, industry, and wealth of Europe. This is the most important portion of Brazil, and where the population, large cities, and commerce have principally accumulated.

The *climate*, although somewhat tempered by the proximity of

the sea and the extent of the forests, is, however, excessively hot; the summer is insupportable to those Europeans who cannot resort for a few months to the heights. The air is not generally unhealthy, but the yellow fever from time to time causes terrible ravages. The dry season lasts from September to February, and the rainy from May to September.

Vegetation. — Were it not desirable to avoid repetition, we should again dilate, in connection with the maritime plain of Brazil, upon the magnificent vegetation of its virgin forests. Next should be mentioned the innumerable quantity of *banana trees*, which do not flourish in the dense shade of the forests, but may be encountered wherever there is sunshine; *palm trees*, of which the most useful and the most widely diffused species, the *cocoa nut*, is not originally from Brazil; the *manioc* root, whose farina constitutes the principal food of the poorer classes, and of which Brazil appears to have been the primitive country; *kidney beans*, which are the most popular legume in this country; *maize*, *melons*, *ignames*, *batatas*, and another plant of the same genus, whose tubercles are somewhat similar to potatoes, and very wholesome, possessing the taste of the artichoke; *rice*, which is said to be indigenous in certain regions of South America, and which thrives in all the portions of the plain which are easily watered. Besides these alimentary substances, properly so called, Brazil also furnishes colonial commodities of considerable importance; *coffee* and *sugar*, whose production increases yearly, and *tobacco* and *cotton*, in smaller quantities, but of a certain reputation.

The forests of Brazil are very rich in medicinal plants and gums, as also in dye and building woods. Besides the sarsaparilla, the caoutchouc, and certain varieties of cinchona, or Jesuits' bark, (plants which are already known to us,) may be named the *ipeacuanha*, whose long roots, of the size of a quill, contain an important medicinal principle, employed principally as an emetic, and the *cassia*, (*cassia fistula*,) a beautiful tree, of the aspect of the walnut, whose fruits, in the form of pods a foot and a half long, yield a reddish, sweet, and tart pulp, found in a great number of distinct cells, and which enters into the composition of different diet drinks, and furnishes a very mild cathartic.

Among other celebrated dyewoods should be specified that which has given its name to the whole country—the *Brazil wood*, which yields a beautiful dye for wool, cotton, &c. This wood, which is the object of an extensive commerce, is furnished by a tree of the size of the oak, of an unsightly appearance, with red flowers resembling those of the lily of the valley; it grows among rocky and dry soils, and yields important revenues to the Brazilian government. It is also called *Pernambuco wood*, from the name of the principal port whence shipments of it are made.

Animals abound in the maritime plain as in all the rest of Brazil. *Domestic animals*, oxen, horses, sheep, and hogs, are not very abundant, except in the extremely southern portion, in the neighborhood of the pampas. But the common jaguar, the jaguarete, or black tiger, the cougar, the Brazilian wolf, wild dogs and cats are quite numerous. Among the inoffensive animals, which are the ordinary prey of wild beasts or of man, may be mentioned many stags, agoutis, tatons, anteaters, peccaries, (all animals which have already come under our notice,) besides *pacas*, small quadrupeds of a brown color, with white and spotted transversal bands, which live in burrows on the borders of rivers, subsist on fruits, are easily tamed, and whose flesh is delicious; and *Guinea pigs*, much smaller, and almost senseless quadrupeds,



Guinea Pig.

which are now widely disseminated in Europe, where they multiply to an extraordinary degree; the fur of this animal is usually tri-colored, (brown, white, and yellow;) its flesh is considered excellent.

Singular animals, which are frequently met with in the forests of Brazil, are the *sloths*, (or tardigrades,) which somewhat resemble deformed and benumbed monkeys. Much compassion has been wasted upon them by naturalists, who have examined them on the ground, for nothing can then equal their awkwardness,

and no animal appears more ungraceful, clumsy, and helpless. If they attempt to walk, the disproportionate length of their fore feet compels them to drag themselves along on their knees ; if they remain seated, their mouth is upturned to the sky, and they can neither drink nor feed on the ground. But all these imperfections disappear when found in their proper element on trees,



Sloth.

and they even afford us a fresh proof of the admirable wisdom with which divine Providence establishes harmony between the internal and external organs of a being and the conditions of its existence. The sloth passes its life on trees, whose leaves constitute its only nourishment, and enable it to dispense with water ; it transports itself from bough to bough and from tree to tree, scarcely ever descending to the ground ; its long arms serve to encircle the largest branches, and its two or three long and pointed claws aid its progress, and enable it to sleep and eat with its body suspended by the fore paws—a position which would be intolerable to any other animal ; it does not move, it is true, with

great rapidity even on trees ; but it is, nevertheless, far from exhibiting the sluggishness which its name implies ; its flat and coarse hair, in appearance and color resembling dried grass, or moss, screens it from the sight of carnivorous animals, or of the Brazilian armed with arrows. Among the sloths, two principal species are distinguished. The *ai*, or three-toed sloth, which owes its name to its cry, is of the size of a cat, and its arms are double the length of its legs ; the *unau*, or two-toed sloth, is only half the size of the former ; its arms are shorter, its muzzle more elongated, and it is generally less disproportioned.

The *monkeys* present very numerous varieties ; their flesh is considered excellent by the Indians. When they perceive one of these animals on one of the gigantic forest trees, they lie in wait for it, and climbing a neighboring tree, endeavor to pierce it with one of those arrows which rarely miss their aim.

Among the innumerable birds of Brazil, especial mention should be made of the *humming birds*, diffused every where, and the *colibris*, which are also found in Guiana, but which cannot, like the preceding, be transported from the torrid zone to the



Colibris.

countries of the north ; they feed upon small insects, which they seek with their tapering beaks at the bottom of the honeyed corollas of the flowers ; but many persons labor under the delusion that they subsist upon the juice of these flowers. There are likewise *parrots* of all species ; among others *aras*, of magnificent and dazzling colors, and *toucans*, which greatly attract the notice of strangers, not only by the beauty of their plumage, from which the savages obtain the richest portion of their ornaments, but also from the singular conformation of their enormous



Toucan.

beak, almost as large as their body, (although very light,) and containing a tongue which bears more resemblance to a quill than to any thing else ; they feed upon the flesh of other birds, and also upon fruits. No less singular birds are the *kamiches*, of the size of turkeys, and having in the middle of the forehead a horn, two or three inches high, and in front of their wings two long spurs, triangular, horned, and very strong, with which they strike birds of prey with redoubled blows, which the latter can only escape by cowardly flight ; in certain places they are reared among poultry, for the sake of the protection which they afford. The forests contain *hoccos*, birds which also resemble turkeys, live in numerous companies, perch on the highest trees, and subsist on fruits and buds ; their white flesh, of exquisite flavor, is highly esteemed by the inhabitants of the countries where they exist, and seems to designate them as one of the species whose acclimation should be attempted in other countries. The birds of

prey are principally *vultures*, which abound in the neighborhood of the cities and on the shores, which they cleanse from many impurities; the most remarkable are those which have been dignified as the *kings of the vultures*.

Reptiles, although very abundant, are not, however, as numerous or as formidable as is generally supposed. The serpents, even rattlesnakes, rarely attack man. The *boas* there acquire enormous proportions, as many as 20, 25, and even 40 feet; they are particularly dangerous when, suspended from a tree by the tail, they await the appearance of prey in order to spring upon it, break its bones in their folds, and swallow it slowly by a kind of suction. The ugliest of the reptiles of Brazil is the *horned toad*, naturally as large as the crown of a hat, and which can inflate itself to a much greater size. If irritated, it distends an enormous mouth, giving utterance to its cry, and seems to threaten its enemies by erecting the species of fleshy horns which project above each eyelid; it is, however, harmless. When the heavy and sonorous voice of the *bellowing frog* startles the ear, one can scarcely believe that he is not in the neighborhood of a far larger animal. Innumerable multitudes of *lizards* may every where be seen, even in the houses; and the large species furnish an excellent game, which is served on the best tables: the flesh may be compared to that of a young chicken. As respects *insects*, no country in the world offers such riches to entomologists. The *butterflies*, among others, are very remarkable; as, for instance, the *agrippina moth*, a gray butterfly, which is nine inches and a half in width; the *nestor*, whose blue wings glitter resplendently in the rays of the sun; and the *leilus*, whose black wings are threaded with green fringes. During a clear tropical night, a more astonishing spectacle can scarcely be imagined than that of the *fireflies*, whose rapid gleams of phosphorescent light cross each other in every direction. Like living candles, some of these coleoptera diffuse sufficient light to enable one to read in the middle of the night. But the noxious or venomous insects are the principal scourge of these charming countries. They are so numerous in certain forests on the coast, that it is affirmed that their buzzing is often heard on board ships which are anchored at some distance. Foremost should be mentioned the *mosquitos*,

much larger and more terrible than gnats; *white ants*, which cause much havoc in certain districts, *scorpions*, *millepedes*, and certain *spiders*, whose bite must be avoided; and especially a species of pucerons, so small that they can scarcely be perceived with the naked eye, and whose bill is so pointed that they pierce shoes and garments, and penetrate even into the flesh. There they immediately become enveloped in a white, spherical bladder, in which their eggs are enclosed. If this bladder is left several days under the skin, it acquires the size of a pea, a violent inflammation ensues, which may result in an ulcer of a very malignant nature, and finally in gangrene, in consequence of which it is often necessary to amputate the toes, the part principally exposed to the attacks of these insects. In order to obtain relief, one usually has recourse to young negroes, whose excellent eyesight easily enables them to perceive the red point on the skin through which the chique has introduced itself, and who, enlarging the aperture by the aid of a needle, endeavor to remove the bladder whole; failing in this, the young insects become dispersed in the wound, and create new torments.

The *population* is composed of four principal elements: white creoles, almost all of Portuguese origin; negroes, some of whom are free, and others slaves, but still very numerous; mulattoes, descending from blacks and whites, and Indians. The *creoles* are whites, born in America; they are generally enervated by the climate, and averse to labor, which they abandon to their numerous slaves.

We have already spoken of the evil example too often afforded by the Brazilian clergy, whose moral influence is almost ineffectual for good. Primary schools are so rare that they may be said to have no existence; the higher schools are little frequented, and instruction in them is very poor. In certain provinces assassinations are committed in broad daylight, and the murderers boast publicly of the number and quality of the men whom they have poniarded. They bribe or intimidate their judges, and if they belong to a powerful family, no witness would dare to testify the truth against them before any tribunal whatever. In a word, this population languishes in moral and physical misery, upon a fertile soil, and amid the wonders of a luxuriant vegetation unknown in other climes.

The *negro race* has not increased in number since Brazil consented to the abolition of the slave trade, which is, however, always prosecuted, to some degree, in a clandestine manner. There are, however, several millions of negroes, some few of whom only have succeeded, by assiduous labor in their holidays, in procuring the money necessary to emancipate themselves. Many fugitive slaves live in the depths of the forests in the most profound misery; they are called *runaways*. The natives, who cherish an implacable hatred against them, massacre them unmercifully; and they are, on the other hand, incessantly menaced by soldiers.

The *mulattoes* are intelligent and active; and utterly abhorring the creoles, they aspire to possess themselves of the government, and will eventually attain their object in the northern provinces.

The *Indians* are distinguished as *Mansos*, or tamed Indians, and *Tapuyas*, or savages. The former have received Catholicism, are engaged in agriculture, and reside on the coasts and in the vicinity of towns and small villages. The latter lead a life of complete independence, and although generally at peace with the whites, they often perpetrate robberies and murders. Their weapons are the bow and arrow and the cutlass; they wage among themselves continual wars, and several of their tribes have preserved the custom of eating their prisoners. These savages are of middling stature; they have a thick-set, but well-formed body, smaller hands and feet than the Europeans, long hair, thin beard, a short and round face, and a yellowish or copper complexion. Their appetite is brutal, and their only care is to provide themselves with food; but, if necessary, they can sustain hunger a long time. The tribes on the coast best known to the whites are the *Purís*, the *Camaques*, and the *Botocudoes*, who surpass all the others in strength and ferocity. Their favorite ornament consists of bits of wood, which they insert in apertures made in the upper lip and in the soft part of the ear, which apertures are enlarged by introducing into them, successively, blocks of greater and greater size, until they have attained the dimensions required by fashion. The attempts made by missionaries to convert these savages have almost always failed.

THE SELVAS OF THE AMAZON.—The *selvas*, or wooded

plains of the Amazon River, extend from the mountains of Guiana at the north to the chain of the Andes at the west, and southerly



Botocudos.

towards the plateaus of the Campos, into the heart of which they penetrate through the damp valleys of the great rivers. With the exception of a very small number of sandy steppes, a vast extent of surface presents, so to speak, only a sea of verdant forests, where vegetation displays unparalleled force. The trees attain colossal proportions, and the forests are rendered so dense by innumerable climbing plants and parasites of all kinds, that the sun's rays can scarcely penetrate through their foliage. Thousands of vegetables of these regions are still unknown to us, since the whites have scarcely cleared a passage, except along the principal rivers. It is known, however, that these forests are peopled by vast numbers of the most diminutive monkeys, besides parrots and other birds arrayed in the most gaudy colors, and insects of the greatest beauty and variety. Almost all the Indian tribes are still savage and independent, except a small number, who, in the vicinity of the rivers, have admitted a few missionary stations, which are now, unfortunately, very much neglected.

PLAIN OF GUIANA. — This plain, situated between the mountains of Guiana and the ocean, is composed of a border of very low lands, formed by various alluvial deposits, transported to the sea by the vast Amazon River, and driven upon the shores

of Guiana by the constant action of the trade winds and marine currents, which render the sea turbid and slimy for a distance of 10 or 12 leagues. These banks of soft mud, thus added to the shore, are elevated by degrees; the mangroves soon plant in them their tortuous roots, and thus the soil is gradually rendered firm. The rest of the plain is composed of what are called the high lands, generally clothed with forests. Those which cover the low lands are interrupted by immense bare spaces, called *savannas*, some resting on firm soil, others completely marshy, and others, — the *trembling savannas* — presenting a layer of earth two feet in thickness, covered with tufts of very verdant grass, reposing on a soft bed of mud of five or six feet in depth.

The *climate* of Guiana is perhaps less unhealthy than it has been represented; yet it speedily enervates Europeans, and exposes them to dangerous fevers, especially in the low lands, which are by far the most fertile and populous portion. This climate is possessed at once of extreme heat and dampness. The year is divided into two seasons: the dry, from July to November, during which it very rarely rains, and the season of the tropical rains, which lasts from November to July, except an interruption during *the short summer of March*. Eight times as much rain falls there as at the Observatory in Paris. The power of the sun is withering; no one can expose himself with impunity to its rays, and a straw hat affords an insufficient protection. One should place a piece of wet linen in the crown of his hat, and especially abstain from quitting the shelter of his roof during the middle of the day.

Vegetables. — Few countries yield more useful woods for building and cabinet work; but we will not reiterate what has already been said of them in connection with the mountains. When the low lands have once been drained by a very extensive system of canals, they furnish the colonial commodities, and the choicest fruits, sugar cane, coffee, cotton, indigo, pepper, manioc, ignames, batatas, the pomegranate and fig of Europe, oranges, lemons, and pears. A shrub peculiar to Guiana yields a seed, the use of which has become common in the art of dyeing; this is the *arnotto*. The *arnotto* is a tree of considerable height, and more bushy than the plum. Its clusters of flowers, very similar to

wild roses, are replaced twice a year by burs of smaller size than those of the chestnut, but equally prickly. They contain small seeds, covered with a carnation-colored pellicle; and this is what composes the arnotto. When the pods open spontaneously, they are collected, and from them are detached the seeds, which are immediately cast into great troughs filled with water. When the fermentation commences, the seeds are crushed and the liquid portion, which is more or less thick and reddish, is strained through sieves; it is afterwards placed over the fire, the scum removed, and this scum, after being boiled several hours, is poured into moulds, and becomes the tinctorial matter of a beautiful vermillion red, which is chiefly employed in imparting very brilliant, but not very enduring hues to silks. Its cultivation is not as much encouraged as formerly.

Besides the caoutchouc and the sarsaparilla, of which we have already spoken, Guiana also supplies the *quassia* or *surinam wood*, a shrub whose root contains a bitter principle much used in medicine as a tonic, particularly for assisting the digestive functions of the stomach; the *balsam of copaiva*, a resinous juice, which is obtained by making deep incisions in the bark of a large-tufted and elegant tree that grows in almost all tropical America, and which resin is also an energetic stimulant, much employed in medicine; the *angostura*, a tree whose bark has long been very much esteemed as an antidote to dysentery and intermittent fevers; and the *arrowroot*, (so called because it was thought to serve as a remedy against the poisonous arrows of the Indians,) a plant whose long root, grated over a vessel filled with water, deposits at the bottom a fecula less white than that of the potato, but light, strengthening, and very useful in cases of protracted convalescence. On the other hand, this country furnishes terrible poisons, of which the savages make use for poisoning their arrows; they prepare it with the juice of a climbing plant, the *strychnos toxifera*, whose effects are quick and powerful.

The *animal* is no less varied than the vegetable kingdom. Birds of all sizes: the colibri, ara, and toucan bedeck the forests with their brilliant plumage, whilst a bird of the size of a jay, and as white as snow — the *campanero* — makes its voice heard at more than a league's distance, shrill and clear as the silvery sounds of

a bell, whence it derived its name, which signifies *bell bird*. Another bird of the same country, which must not be confounded with the latter, is the *agami*, surnamed *trumpeter*, on account of a



Trumpeter.

singular noise which seems to proceed from the interior of its body, like a kind of ventriloquism. This animal, a little larger than a hen, and of a mild and confiding nature, is easily tamed, recognizes its master and courts his caresses, and becomes, it is said, the guide and protector of all the other birds of the poultry yard, which it defends courageously even against dogs, so that it would seem very desirable that it should be acclimated every where.

The quadrupeds are almost precisely the same as those that are encountered in all the warm countries of South America — jaguars, cougars, tapirs, anteaters, peccaries, pacas, agoutis, tatons, and *crab-eating dogs*, which live on the sea shore, and by means of their paws draw the crabs from their holes; many monkeys of all species, among others the *titi*, or *ouistiti*, a charming little animal, which does not attain the size of a squirrel; the *howling monkeys*, whose flesh is said to be excellent, and which avail themselves of their long, prehensile tail, not only in shooting

from branch to branch and from tree to tree with surprising agility, but which aid each other mutually, by extending, not the hand, but the tail, to support one another in crossing a stream; and the *kinkajou*, an animal of the size of a cat, with woolly fur,



Kinkajou.

of a red color, gay and alert during the night, and sleeping continually during the day. It leaps with agility from bough to bough, clinging to the branches by means of its tail; it destroys many birds' nests and beehives, first breaking the honey comb with one of its paws, and then thrusting its long tongue into the aperture, thus collecting its booty even at a foot's depth in the hive.

Dangerous reptiles, boas, rattlesnakes, and others infest the forests; formidable hosts of insignificant insects; the mosquitos, which inflict terrible tortures upon the Europeans; pucerons, which penetrate deeply into the flesh, and *cancrelots*, which devour provisions and damage all the stores.

The *population* is composed of whites, negroes, and Indians. The whites are English, Dutch, and French, who have divided among themselves the low plain, and cultivate principally the colonial commodities. The negroes, formerly all slaves, labor very negligently since they have obtained their liberty, so that the pro-

prietors of certain plantations have been obliged to replace them by free laborers introduced from India at great expense. In Dutch Guiana, slavery always exists. The Indians are still more indolent, more passionately fond of music, dancing, and liquor, and the continual wars which are carried on among them are daily diminishing their number.

In all these colonies missionary labors have been undertaken for converting to Christianity the negroes and Indians, who are yet plunged in superstition, and in the most profound moral darkness. They have obtained, up to the present time, but little success, except in certain portions of English Guiana, and especially in Dutch Guiana, where, in spite of the difficulties which slavery presents, the missionaries of the Society of the Moravian Brethren, with their usual devotedness, have established schools and stations even among the runaway blacks, who have taken refuge in the forests of the interior. One alone of their churches, that of Paramaribo, computes no less than 5000 communicants, and most of the plantations are now open to them, since the proprietors have perceived the salutary and pacific influence which their preaching exercises over the blacks.

THE LLANOS OF THE ORINOCO. — The llanos of the Orinoco, situated between the Andes and the mountains of Guiana, are immense and monotonous plains, where often, for a space of 20 leagues in circumference, not a tree nor a hill meets the view, and where the only eminences which are to be seen are rocky platforms, a few feet in height, on which the cattle find a refuge at the period of the inundations. Twice every year the aspect of these regions undergoes a total change. After the rainy season, during which the greater part of the plain is submerged, the ground is covered with abundant grass, rising from 7 to 10 feet in height, and which, when agitated by the breeze, undulates like the waves of the ocean. But as soon as the heat of summer commences, the grass turns yellow and withers, the springs dry up, and no verdure is to be seen, except on the borders of rivers, whither the cattle resort in search of freshness and shade. The heat then becomes insufferable, and wearies the eyes of the traveller, who is often a victim to the illusions of the mirage. From this calcined soil rise clouds of dust, like the simoom of the deserts of Africa,

whose poisonous breath sometimes causes animals to perish by thousands. Autumn arrives, and it is necessary to burn the grass in order to obtain finer herbage in the spring; it is set on fire in many places at once, and it is impossible to conceive of the magnificent spectacle exhibited by this ocean of flame, which destroys every thing that it encounters, and in consequence of which the vultures reap abundant harvests in the multitudes of serpents, large frogs, and other small animals, surprised and overtaken by the fire.

The *climate* presents the two contrary extremes of excessive humidity during the rainy season, and scorching heat during that of the drought.

Animals.—In these llanos the principal occupation consists in the rearing of cattle. Every great proprietor possesses 15, 20, 50, and even 100 leagues of savannas, and from 20,000 to 50,000 head of horned cattle and horses; these droves are usually tended by a company of herdsmen on horseback, placed under an overseer, on whom devolves the management of the *hatos*, or farms, generally composed of three or four houses, constructed of earth mixed with dried grass, and covered with palm leaves. These oxen and horses are descended from those which the Spaniards introduced into these countries after the conquest: there are also herds of asses, swine, and wild dogs; the last have indeed become so numerous in certain places, that they inspire solitary travellers with fear. The mode of milking cows in these *hatos* is very singular. As they are perfectly wild, the farmers do not attempt to milk them until after the birth of a young calf, which they then bring to the farm followed by the mother, and a rope being passed around the legs of the latter while the little animal takes its nourishment, she can be milked in perfect safety; at other times, however, it is only by flinging a *lasso* round their neck and hoisting them in the air, until the hind feet scarcely touch the ground, that they can be kept quiet. When a horse is in request, the *liavero* captures him with the lasso as in the *pampas*, subdues him by striking him on the head so hard as to stun him, after which he bandages his eyes, places a bit in his mouth, a saddle on his back, and mounting him, lets him loose in the plain, and endeavors to tame him by fatigue, without suffering

himself to be thrown. The sale of horses and oxen, tallow and hides, forms the principal revenue of the very thinly scattered populations which inhabit the borders of the Orinoco and its tributaries.

Wild beasts of all kinds abound in these vast plains, and in the neighboring forests. There may be encountered troops of stags and deer, tribes of monkeys, tapirs, jaguars, &c.

The *population* is composed of whites of Spanish origin, and of mulattoes who are principally occupied in the rearing of cattle, and exhibit great coarseness of manners. There exist also in these plains, and in the forests of the Upper Orinoco, various Indian tribes, very different in language and civilization. Some, brought under the influence of devoted Catholic missionaries, have abandoned savage life, and have been initiated by them in the elements of Christianity and civilized customs. Unfortunately, in the midst of the continual political revolutions which agitate these countries, labors of this nature obtain no encouragement. Others of these Indians, still nomadics, and complete strangers to agriculture, subsist on fern roots, lizards, ants, gum, and earth, and seem to be the offscouring of the human species; such, for example, as the *Otomaques*. The earth which they eat is a rich and unctuous soil, a veritable potter's clay. They carefully collect it on the borders of the Orinoco, mould it in balls of from four to six inches in diameter, and cook it before a slow fire until the outer surface acquires a reddish hue. When they wish to eat this ball, they moisten it anew. The natives are so fond of it that they consume a small portion every day, even in the season when fish and other food are abundant. Another tribe, that of the *Caribs*, the remnant of a vast nation, is still addicted to cannibalism, notwithstanding the extraordinary softness of its language; and there are the Indians who up to the present time have prevented explorers from penetrating to the sources of the Orinoco.

PLAIN OF MAGDALENA. — The plain of Magdalena, situated between the northern branches of the Andes and the sea, is a country of slight extent, and whose productions are not generally remarkable. The climate is excessively hot, the air quite unhealthy, and even in certain places actually pestilential; the country is very much exposed to shocks of earthquakes. At the

period of the most intense heat, the wealthy families of Carthage and other cities of the coast seek a somewhat fresher atmosphere at the village of Turbaco, on a small plateau, from the surface of which rise 20 little volcanoes, from 20 to 25 feet in height, having at the summit a circular basin filled with water, constantly agitated by exhalations of hydrogen gas, which are repeated about five times every two minutes, and are usually preceded by a hollow rumbling, which is followed by an eruption of liquid mud and gas.

The *productions* are very nearly the same as those which we have previously assigned to the plateau of New Granada — cotton, indigo, tobacco, wheat, &c. We shall only direct the attention of our readers to two plants, which are more abundant in this country than elsewhere — the milk tree and the balsam of Tolu. The *milk tree*, or *cow tree*, (*palo di vaca galactodendron*,) is one of the most curious productions of tropical nature. Similar to the apple tree in form, with broad leaves, it yields a whitish and glutinous beverage, of an agreeable taste and of a harmless character. This mild and nourishing liquid is more abundant at sunrise than at any other time of day. The negroes and Indians may then be seen flocking from all quarters with large vessels destined to receive the milk, which soon turns yellow and thickens on the surface. Some even drink it under the tree; others carry it to their children. M. de Humboldt compares this marvellous vegetable to a shepherd distributing to his family the milk of his flocks; and in truth we cannot sufficiently admire this precious gift of divine bounty. The *balsam of Tolu*, so called from the name of the city of Tolu, is a tree of elegant and graceful appearance, from whose trunk is obtained, by incision, a balsamic substance, of a tawny yellow color, a very sweet odor, and a tart, but agreeable taste. The *balsam of Tolu*, as likewise that of *Peru*, which proceeds from trees of the same genus, (*myroxylum*,) and bears a close resemblance to the former, is much employed in perfumery, and also in medicine as a cure for coughs, or as a stimulant.

THE VALLEY OF THE MISSISSIPPI. — The *valley of the Mississippi* consists of a vast plain of 1,200,000 square miles, which occupies all the central part of North America, and ex-

tends from the Rocky to the Appalachian Mountains, and from the borders of the Gulf of Mexico as far as the Minnesota plateau, in 45 degrees north latitude, which stretches from east to west, near the sources of the Mississippi. This plain, whose general character is that of perfect uniformity, rises by a gentle and regular slope on the western and northern sides; but in the direction of the Alleghanies, the slope is interrupted by hills and valleys, which constitute the most fertile territory of the United States. A country of such considerable extent must necessarily vary widely in different portions, in respect to soil, climate, and productions. The four principal divisions by which it is distinguished may be characterized in the following manner:—

The *maritime plain*, comprising *Texas* at the west, and *Louisiana* at the east, around the delta of the Mississippi; very hot countries, and quite unhealthy; exposed at least to the ravages of fevers, especially to those of the yellow fever, but of a very rich vegetation, producing an abundance of cotton, sugar cane, and other commodities or fruits of the hot climes.

At the foot and eastward of the Rocky Mountains stretches a sandy desert, a species of steppes, scorched in summer and frozen in winter, destitute of trees and water, except on the borders of rivers, and covered only during a portion of the year with coarse, short, and thick grass, and in some places with a layer of salt several inches in depth, like that which is remarked in the steppes of Upper Asia. These are the principal hunting grounds of the natives; but neither the cabin of the white man nor the wigwam of the Indian is to be seen. This is the eastern portion of the *Great American Desert*.

The *savannas*, so called, or *prairies*, which extend from the region of the steppes as far as that of the Great Lakes, and to the Mississippi, are immense and monotonous plains, although a little undulated, clothed with abundant and flowering grass, and occasionally, although rarely, intersected by forests or thickets of wood, so that one may traverse them for several days without encountering a single shrub. The remote portions of the savannas, which have not been invaded by cultivation, still afford very good hunting territories; the game, however, is rapidly diminishing from day to day.

The *basin of the Ohio and Tennessee*, on the western slope of the Appalachians, composed of deep, warm, and fertile valleys, forming a vast and magnificent forest, already sensibly thinned by cultivation, and presenting the finest trees of the United States. The climate of these two latter portions is generally temperate; however, the variations of temperature are sudden and excessive, and the cold is very keen in winter, because no mountain shelters the plains of the Mississippi from the icy winds of the poles.

Minerals are not abundant; they consist principally of *coal* in the valley of the Ohio, and of *lead* in the savannas of the Illinois and Missouri, tributaries of the Mississippi.

The *animals* are the most remarkable and the richest portion of the productions of these plains. The *buffaloes*, or *bisons*, deserve the first mention among those animals which are the object of the assiduous chase of the natives and whites. The American buffalo differs essentially from the bison of Europe or Asia. Over its head and its shoulders, rounded by an enormous hump, floats a terrible black mane, which covers its whole face, and sometimes even reaches to the ground, giving it a fearful aspect. Its horns are short, but formidable, and the expression of its round eyes is extremely savage. The female is a little smaller than the male; the latter weighs as much as 2000 pounds; it is the largest ruminant of the new world. The buffaloes often traverse these vast plains in very numerous troops, and their almost periodical return is awaited with impatience by the Indians, who, besides the pleasure which they derive from pursuing this animal, make such great account of its flesh, that they disdain all other game. This hunt is performed on horses, trained expressly for the purpose, which sagaciously advance within three or four paces of the buffalo, always pressing it on the left side, in such a manner that the hunter can unerringly pierce it to the heart with his arrow. As soon as the arrival of a drove is announced, the Indians usually divide into two bands, which take opposite directions, but gradually approach so as to form a vast circle, encompassing the herd. Immediately upon their becoming conscious of the approach of the hunters, they take to flight in great disorder, and endeavor to break the line of dogs, by uttering terrible bellowings, and attack-

ing the horses with their horns ; nevertheless, the greater part of them usually perish. Another less perilous mode of hunt consists in attacking the animal by surprise, the hunters skilfully



Buffalo Hunt.

enveloping themselves in a wolf skin, and creeping on their hands and knees directly in front of the buffaloes, which, not alarmed by these false wolves, only put themselves in a position to maintain a defence with their horns. The Indians, thus disguised, are armed with their bows and good arrows, and when they have arrived within a certain distance, there is no time left for the buffalo to make its escape.

It is also by a ruse that the Indians generally succeed in obtaining possession of the *antelopes*, which are little appreciated by them except when their skin is in requisition for the manufacture of garments, or when there is a deficiency of buffaloes. The antelope is, as we are already aware, a graceful and very timid animal, which always keeps aloof from man, and avails itself of the fleetness of its limbs in eluding his approach. Unfortunately for it, it is very curious. When the Indians wish to kill one of

them, they lie flat on their faces in the grass, and attach to a stick planted in the ground a piece of red or any other colored cloth. The antelopes are then sure to be seen, one after another, approaching the object which has attracted them. The hunter in ambuscade improves this moment to shoot his arrow or fire his musket at the poor animal, and with his accustomed skill he infallibly stretches him on the ground. In these regions are found two species of antelopes; the one almost the size of the common stag, and the other no larger than the goat.

The savannas and steppes also nourish numbers of *wild horses*, which the Indian or white hunters succeed in seizing and taming, by the aid of a species of lasso very similar to that which is used in South America. Every native warrior has at least one horse, which he manages with extraordinary dexterity. The abduction of horses from the white establishments or hostile tribes is indeed the most common cause of the constantly recurring hostilities which decimate the savage populations.

Many other animals (which are already familiar to us) are met with and hunted in these plains: such are stags of great size; elks, whose flesh is highly prized; deer, hares, wild dogs, whose flesh is eaten, (the Indians even eat that of their domestic dogs;) many species of bears, all very much dreaded, especially that which is called the *grisly bear*; different varieties of wolves, some white, others red, and all great destroyers of game; gluttons, jaguars, carcajous or lynxes, opossums, peccaries, &c.

One of the most singular animals which these countries produce is that which is called the *prairie dog*, a species of marmot, whose only analogy to the dog consists in a kind of barking. This little quadruped, of the size of the rabbit, is a very lively, frolicsome creature, always in motion, and eminently sociable, so much so that thousands of them often assemble on the same spot, and by digging their deep burrows in many regular, parallel lines, raise mounds of earth which give their habitations the appearance of tents, and of a miniature encampment. On approaching one of these villages, some of these animals may be seen wandering in the streets, others rambling in companies from one dwelling to another, some browsing on the fresh grass, and

others collected in places as if holding council together. But as soon as one of them perceives a man, he gives the signal of danger by shrill cries, and the whole colony immediately precipitate themselves into their subterranean dwellings, which are dug at such a depth that no one can penetrate into them. These villages, which often cover many acres in extent, are not inhabited exclusively by the prairie dogs; they serve also as a refuge for a particular species of owl, and for rattlesnakes; but we are ignorant whether it is by force or otherwise that these strange guests establish themselves in these habitations.

Rattlesnakes are likewise frequently met with in the wooded places; wild turkeys are also seen in very numerous troops in the forests, and bees, which are advancing farther and farther into the remote regions of the far west, where they are considered by the Indians to herald the approach of the whites; their fragrant honeycombs frequently afford a precious resource to the prairie hunters, who, after having felled the hollow tree in which the bees have deposited their hive, suffocate the poor insects by burning grass before the opening, and afterwards remove the honey at their convenience.

In the valley of the Ohio, and in all the cultivated portions of the plain of the Mississippi, are found, in very great abundance, all the domestic animals which the Europeans have introduced into the new world — horses, horned cattle, and swine.

Population. — The white population, which has long since driven the natives beyond the Mississippi, is gradually invading the entire territory of the prairies; and its adventurous colonists, the rude and intrepid *squatters*, continually extending their clearings, and destroying the large game, will, ere long, have compelled the remnant of the Indian nations to seek, beyond the Rocky Mountains, territories more favorable for their hunts. With their characteristic recklessness the poor natives lull their anxiety on the subject of the rapid disappearance of the buffaloes, by the reflection that the small pox and the ravages of brandy (two absolute scourges among these tribes) will have exterminated them before famine can supervene. Their whole consolation consists in the anticipation of a future existence, where they can hunt amid buffaloes without number, and where the

pale faces (the whites) will not dare to brave the anger of the Great Spirit.

The Indians of the savannas are distinguished for their tall and slender stature, their muscular limbs, prominent cheek bones, aquiline nose, and copper-colored complexion. Peaceable and humane in time of peace, they are cruel in war, fond of torturing their enemies, and of confronting danger. Their presence of mind never forsakes them, for they make it a point never to be astonished at any thing, and always maintain perfect self-control. The life of an Indian, in his own village, is a life of indolence and pleasure: his wife is burdened with all the labors, the hus-



Indian.

band considering that he performs his part when he provides food for his family, watches over them, and fights for their protection. He devotes himself with his comrades to exercises of skill and strength, and too often to games of chance, or passes his leisure in discussing hunts and wars, or in listening to the recitals of some old man skilled in recalling past exploits.

A certain number of tribes are now partially civilized, are occupied with agriculture, and have adopted the costume of the whites. Some have adopted the Christian religion, as, for instance, the *Cherokees*. Among all of them are missionaries, who labor with great success. The tribes which have continued the most numerous are the *Sioux*, *Creeks*, *Pawnees*, *Osages*, *Ioways*, &c. *Negro* slaves cultivate the plantations of the Southern States, especially those of the maritime plain.

THE ATLANTIC PLAIN.—This plain extends from the Appalachian Mountains to the Atlantic Ocean, and from the peninsula of Florida to that of Nova Scotia. At the south the coast is indented with numerous bays and inlets, and lined with many islands, sand bars, and reefs, which render navigation difficult and dangerous. Towards the north, on the contrary, the soil, which is less fertile and more elevated, is bordered with fine roadsteads and excellent harbors, which have wonderfully favored the increase of the commerce and navigation of the United States.

The *climate* of this plain varies considerably, according to the latitude; the summers are generally very warm, the winters extremely severe, and the changes of temperature are every where sudden and frequent. At the south, where the heat is experienced in the greatest intensity, the air is quite unhealthy from the month of July to the month of November; the yellow fever is often prevalent. At the north, the temperature is that of Northern Europe; and yet, according to its geographical position, one would expect to find it the same as that of the south of France. At Paris the temperature is about the same as that of New York, although it is over eight degrees farther north. The active and industrious population of New England, turning to profit the effects even of the rigor of the climate, realize considerable revenues by loading 300 or 400 ships with beautiful blocks of ice, which they despatch even into the East Indies, braving the equator and its scorching heat.

The *metals* are those of which we have spoken in connection with the Appalachians — a little gold, iron, coal, and salt. The *vegetable* productions differ sensibly according to latitude. The trees of the north are generally the same as those of temperate Europe. Nowhere, however, do we find so great a variety among the forest species. According to the celebrated Swiss naturalist, M. Agassiz, there exist in the United States no less than 40 species of oaks. Many varieties of the walnut are also noticed — the white walnut, the black walnut, or *hickory*, valuable for the oil of its nut and the hardness of its wood, the *pecan*, which is still another species, &c. Fruit trees — pears, apples, peaches, plums, and cherries — are very common; the vine and olive have not succeeded. The cereals yield abundant harvests, and the United States, which already supply the greater part of the American coasts with flour, do also, in case of need, furnish many European countries. Maize is cultivated in abundance almost every where.

The *sugar maple* of the Northern States is one of the most beautiful and useful trees which is met with in this part of America. The wood is used for cabinet work and fuel, and from its sap is obtained a sugar almost identical with that of the cane and beet root, which sap is said to contain more sugar than an equal amount yielded by the latter. Every tree, according to its size, yields on an average from four to six pounds. In the first days of spring, (even when the ground is still covered with snow,) at the period when the sap is in motion, there are made in the south side, one or two feet above the soil, two inclined holes, of little depth, in which is inserted a faucet of elder or bark, conducting into a trough the liquor, which without this precaution would run down the bark of the tree. This liquor, carefully collected, is boiled over an active fire, skimmed, filtered, then reheated, and when it has acquired the consistency of a thick sirup, is poured into moulds. This substance then presents the same color as cask sugar; it is brown and hard, but may be perfectly refined. Few would suspect that the quantity of maple sugar manufactured in the United States amounts annually to more than 10,000 tons.

The plains of the south present a very peculiar vegetation, of

an extremely varied aspect. Sometimes they consist of vast sandy plains, covered with forests of pines and red cedars, or *Virginia junipers* ; sometimes of marshy forests, where the mangrove, the salt water shrub, intermingles with wild vines, sassafras, magnolia, tulip, and catalpa trees, the Venus's fly trap, and the *resinous liquid amber*, from whose trunk exudes a very odoriferous balsamic substance, used in perfumery and medicine.

The great staple products of the portion of the United States with which we are now occupied, and which are nowhere of such superior quality or obtained in such considerable quantities, are rice, tobacco, and cotton.

The *rice* of Carolina and Georgia is considered the best in the world. It usually brings double the price of that which is obtained from the East Indies ; it is exported into Europe to a very great amount. This portion of agricultural industry is executed on a great scale ; thus very remarkable machines are employed for winnowing the rice ; by means of steam, enormous pestles are set in motion, and made to descend upon the grains of rice with just the degree of force necessary for removing the delicate husk which envelops them, without crushing the kernels. The soil in which the rice is sown requires to be kept extremely wet, so that the root may be constantly under water ; it yields two crops annually, the first in May, and the second in October ; it is harvested and threshed like wheat. In the United States the



Tobacco Plant.

cultivation of *tobacco* is extensively pursued, especially in Maryland and Virginia. This tobacco is not of the first quality, but its production is yearly increasing, the youth of our time yielding more and more to the temptation of adding to the real wants which nature has imposed upon them, the slavish and expensive necessity of tobacco smoking and chewing. The tribute levied in 1853 by the French government upon this growing passion alone amounted, all costs paid, to the enormous sum of \$27,000,000.

The Americans at the south are particularly proud of their *cotton plantations*, whose progress enters largely into that vein of marvellous prosperity which distinguishes the United States. The cotton tree, which is certainly one of the most precious plants which God has placed within the reach of man, presents itself both in the form of an herb and that of a shrub, from 9 to 15 feet high. The latter is the most cultivated. The fruit is a legume, and contains many seeds, enveloped in a silky down of extreme fineness, which is collected as soon as the fruit opens spontaneously.

The seeds are separated from the down, which is carded, spun, and manufactured into cloth of all kinds. One can scarcely conceive of the immense quantity of cotton goods which are now manufactured in Europe; England alone manufactures 7,000,000 or 8,000,000 of yards a week, and to the amount of \$250,000,000 a year; in the United States it amounts to \$62,000,000. And after the cotton has rendered all sorts of services as cloth, it is conveyed in the form of rags to the paper mills, to be converted into paper, and become the future repository of the human thought and the teachings of science. For the season which closed in September, 1853, the production of cotton has been officially fixed at 1,200,000,000 of pounds, the sale of which must have exceeded \$120,000,000. Of the total quantity furnished to commerce by the different countries which produce it, it is estimated that 86 hundredths are procured from the United States, whilst the exports of the East Indies constitute only 4 hundredths, those of Egypt also 4 hundredths, those of Brazil 3 hundredths, and those of all the other countries together, less than 1 hundredth. The cotton commerce is assuredly the most considerable in the world, next to that of grain; and yet we look

forward to a time when the former commodity will prove insufficient to meet the wants of industry, so much have its manufacture and consumption recently increased. Thus a somewhat prolonged suspension of this manufacture would assume in many countries, and especially in England, all the features of a public disaster. The different species of cotton are divided into two great classes — the *upland* or *short-stapled cotton*, which forms more than 90 per cent. of the American production, and the *sea island*, or *long-stapled cotton*, which flourishes in soils bordering on the sea, and especially in the islands of Georgia; the produce of the latter is much less than that of the upland.

The *animals* of the Atlantic plain are not as remarkable as its plants. All the domestic animals of Europe are found there — stags, ounces, deer, bears, lynxes, wolves, foxes, wildcats, American badgers, porcupines, mephitic weasels, wild turkeys, wandering pigeons, which fly in companies of many thousands, *colins*, which resemble the quails of the old world, herons, flamingoes, and many aquatic birds.

An interesting animal, frequently met with in the forests of the United States, as also in South America, is the *opossum*, called also *Virginia opossum*. This is a quadruped of the size of a large cat, with pointed ears, and a long, prehensile tail, covered with coarse gray hair. It defends itself against its enemies by



Opossum •

diffusing an offensive and fetid matter ; notwithstanding which it is sometimes killed for the sake of its flesh. The opossum is a somewhat nocturnal animal, which usually passes the day asleep in its burrow ; at night it sallies forth in search of birds and their eggs, or, in default of these, insects, reptiles, or even fruits. But the principal peculiarity of this animal is a kind of pouch, suspended underneath its body, in which its young are reared, and from which, when they have nearly attained the size of a mouse, they begin to emerge and play in the grass. At the slightest alarm, a little cry from the mother summons them into this sack, and she retreats with them into her burrow ; or if they are too large for all to find room in the pouch, they leap upon her back, where they sustain themselves by winding their tail around hers.

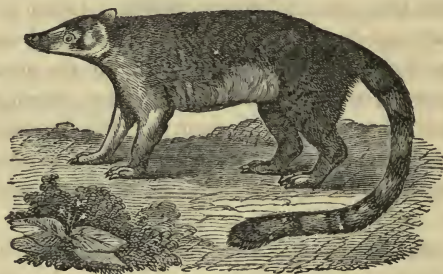
Another quadruped of these regions, which is also a great destroyer of the nests and young of birds, as likewise of maize plantations, is the *raccoon*, an animal of the size of a fox, with a pointed muzzle, beautiful fur of a grayish brown, and a tail an-



Raccoon.

nulated with brown and white. It is very easily tamed, and performs a thousand tricks for the amusement of its master ; but the

latter must always be on his guard against its almost incurable propensity to abstract the eggs from the poultry yard, if not to perpetrate still greater mischief. It is much hunted in the United States both on account of its flesh and fur. The *coati-mondi* — quadrupeds very similar to raccoons, but still more carnivorous —



Coati-Mondi.

are disagreeable in captivity, owing to their capricious disposition, their invincible obstinacy, and their passion for overturning and displacing every object which comes within their reach. The coati climbs trees with all the agility of a monkey, and it is an extraordinary trait of this animal, that it is the only one of its species which descends in a reversed position; that is to say, head downwards.

The *population* is composed entirely of whites in the Northern States, and of whites, mulattoes, and negroes in the Southern States. The white population of the Atlantic States is generally of English descent. The Americans of this region are enterprising, calculating men, of a rare force of will and of indomitable perseverance, passionately fond of liberty, and capable of enjoying it without disorder, respecting the law, which requires neither soldiers nor gendarmes for its protection, deeply penetrated with domestic affection and respect for woman, who is there more thoroughly educated than in any other part of the world; in a word, trained from infancy to a sense of duty under the stern discipline of a rigid Protestantism, whose principles are constantly inculcated among them, in the bosom of the family, in the innu-

merable schools, and more especially in the excellent Sunday schools, to which the best portion of the population, and even the first magistrates, esteem it an honor to lend their support. The government maintains no religious establishment, each individual being at liberty to join whatever church he prefers, and for the support of which he contributes as he may feel disposed. It thence results that each of these churches, being able to rely upon voluntary and devoted adherents, can exert a greater activity in providing for the religious wants which are experienced in its own vicinity and throughout the world. Thus, through the most perfect religious freedom, the diversity of religions and sects, by more completely satisfying the various religious sentiments of individuals, tends, ultimately, by a rivalry in efforts and sacrifices, to regenerate and moralize the people.

THE BASIN OF THE ST. LAWRENCE. — Canada is the basin of the majestic River St. Lawrence, which, flowing from west to east, empties into the gulf of the same name. The western portion, which is traversed by the upper course of the river, and is called *Upper Canada*, or Canada West, is undulated, intersected by chains of hills, and especially remarkable for its great lakes. *Lower Canada*, or Canada East, which comprehends the lower basin of the St. Lawrence, east of the Ottawa River, is generally flat, presenting only here and there a few isolated mountains. These plains are almost all covered by vast forests, and cultivation extends but little beyond the borders of the great river. The St. Lawrence renders all this country, and especially Lower Canada, one of the most picturesque and diversified regions that can any where be found. The *climate* is considered extremely salubrious, although severely cold in winter, and very hot in summer. Canada is situated under the same latitude as France; but its temperature is far more severe. The first snow storms occur towards the close of October, and from that time the cold daily increases in intensity. When the earth is uniformly covered with a thick, icy mantle, the snowy whirlwinds are succeeded by a calm and serene atmosphere, often, however, of such keenness that if a European suffers his face to remain uncovered for a moment, he runs the risk of experiencing painful consequences. When the air is still, even the most extreme cold can be endured;

but this is not the case when the wind is continually assailing one's person with its icy blasts. One day during the time occupied in traversing a space of 300 feet, 20 soldiers of a battalion had their left cheeks frozen almost simultaneously. Sometimes, within doors, one's back may be half benumbed with the cold while he is seated in front of a stove so hot that he is obliged to screen his eyes with his hands; at other times, ink congeals at the extremity of the pen with which one is writing. Provisions of all kinds, preserved by the cold, are sold in a frozen condition; hogs upright on their stiff legs, and milk by the pound, in blocks of white ice. But, on the other hand, winter is to the Canadians the season of activity and diversions. As soon as both good and bad roads have become macadamized by the snow, thousands of sleighs circulate without obstacle to the silvery sound of the bells, transporting in every direction the Canadian peasants, warmly enveloped in thick garments and buffalo robes. The rivers especially are transformed into safe and convenient roads, over which they glide with fearful rapidity. The snow does not melt until April; the spring is very short, presenting little but an alternation of warm days and cold winds. The snow, which thaws by day, forms a mud, that freezes during the night; for some weeks the roads are *rotten*, as the Canadians say,—that is, entirely broken up,—and communications are forcibly interrupted; but as soon as the snow disappears from certain places, the soil immediately produces in these oases a thousand charming little flowers. In summer the heat is excessive; the drought parches the earth; repeated thunder-bolts burst from the stormy sky, which from time to time pours forth a perfect deluge of rain, so that the traveller might almost fancy himself in the tropical regions. Autumn clothes the forests in the richest and most varied hues; the transition, however, is but brief to the rigor of winter.

Vegetation. — It has been said, although with a certain degree of exaggeration, that Canada was merely a vast forest. Its forests undoubtedly constitute one of its principal sources of wealth. England obtains thence an enormous quantity of building wood, masts, planks, staves, &c. This is a commerce which alone occupies from 900 to 1000 ships, and more than 12,000

persons. Many ships for English commerce are also built in the ports of the St. Lawrence. The wood is cut in winter—a long and arduous labor, but one which the Canadian woodcutters execute with extraordinary skill. They often dry the forests beforehand; for this purpose they merely *girdle* the trees, by making in their trunk a continuous and circular gash, from two to three inches in depth. The trees, when cut and trimmed, are converted into immense rafts, on which cabins are constructed, serving as habitations for the woodcutters and their families. These rafts, which are often one or two miles in length, descend the St. Lawrence, and after experiencing a thousand perils, are anchored near Quebec, the capital of Canada, where they are usually sold. The dry rot is the principal defect of the Canadian woods. The family of fir trees is the most numerous; next to them the maples, from which also sugar is extracted, as in the United States, birches, lindens, American elms, oaks, which thrive but indifferently, the *Canada poplars*, which sometimes attain 100 feet in height and 36 in circumference, &c. The light festoons of the wild vine are a characteristic ornament of these Canadian forests, but the climate of Canada would prove too cold for the cultivated vine. Another important product of these forests is the *potash*, which is obtained by burning the wood, making a lye of the ashes, and causing this lye to evaporate over the fire. This substance, which exists in greater or less quantities in most plants, has much resemblance to soda; it is a species of white, or gray, and very caustic alkali, employed in the arts. It is from North America and Russia that commerce obtains the most potash.

The alimentary and textile substances are not wanting, for the soil is generally fertile, and produces all kinds of cereals, flax, hemp, and even tobacco; legumes and fruits, (except those which require a longer summer in order to attain maturity:) pears, apples, cherries, and melons are cultivated; strawberries and raspberries grow profusely, and require no care. A plant peculiar to this country, known under the name of *wild rice*, grows abundantly in the mud of the rivers; it furnishes nourishment to the wandering Indians, as likewise to the birds of the marshes.

Animals.—The domestic animals and poultry are such as are

found in most European countries ; but Canada is especially renowned for its wild beasts, and its valuable fur-clad animals, such as the stag, the American elk, the deer, the roebuck, the bison, the gray squirrel, the marten, the ermine, the mephitic weasel, the hare, the rabbit, the wildcat, the fox, the wolf, and the bear. The last, guided by instinct, seeks, before the approach of winter, a tree with a hollow trunk which it can easily climb, in order to take up its quarters in the interior. But as soon as the first spring breezes are felt, the animal descends backwards from the lofty apartment where it has so long slumbered. The marshes nourish otters and beavers. The latter, which were, for a long time, the principal object of the Canadian hunts, have by degrees retreated, and almost disappeared before the innovating progress of the human race ; they, at least, no longer enjoy sufficient security to undertake those ingenious constructions which have rendered them celebrated, and of which we shall speak hereafter. The birds are essentially the same as those of the United States : among others may be seen many wild turkeys ; and it is a singular fact that even humming birds and fireflies wander thither during the heat of summer.

The *population* is composed almost exclusively of whites ; the remnants of the Indian tribes are very inconsiderable, and have, for the most part, adopted the agricultural life, and a part of the manners, customs, and religious principles of the whites ; they are perfectly peaceable, but are gradually becoming extinct, with the exception of a small number, who wander without fixed habitations in the mountains of the north ; and about five thousand others, descendants of the celebrated tribes of the *Hurons*, *Iroquois*, *Abenakis*, *Algonquins*, &c., who live collected in villages, principally on the borders of the St. Lawrence, whence they repair to the cities to dispose of the products of their industry — their chase and fishery. All are annually visited by Catholic missionaries, who have even erected chapels at certain posts ; the Protestants have scarcely accomplished any thing among them. The white population of Canada is divided into two wholly distinct races — that of Upper Canada, which consists almost entirely of English colonists, an enterprising, active, and industrious race, which multiplies with singular rapidity, and will shortly be pre-

dominant in the country as well in number as in energy ; and that of Lower Canada, composed of descendants of the first colonists whom France despatched thither during the period when she occupied this country. They are simple, polite, gay, and peaceable men, but hasty, reckless, superficial, and generally very ignorant. They have preserved almost unchanged the old social institutions of France, such as they were before the revolution ; and by their apathy, their gross superstition, their ignorance, and their poverty, they form a striking contrast to all their neighbors of the English race. With the exception of a small number, the French Canadians are all Catholics, and strongly attached to their priests and to their church, which enjoys the most entire liberty. Among the Canadians of English origin, some who have emigrated from Ireland are Catholics ; but the great majority, especially in Upper Canada, are Protestants.

NORTHERN PLAINS.—From the Minnesota watershed, where the Mississippi takes its rise, the plains lying east of the Rocky Mountains incline northward and eastward.

Covered with rocks, woods, and vast marshes, interspersed with numerous lakes and rivers, which in the high floods wander from one lake to another, overflow on many sides, and often change their names, these plains have a certain analogy to Siberia, Finland, and Lapland. They complete that body of cold, marshy, and arid plains of the old and new world which border the Arctic Ocean.

Climate.—The temperature, undoubtedly, varies somewhat with the latitude ; it is, however, almost every where very rigorous, and scarcely encourages vegetation. The winter lasts about eight months, from October to May, and the cold is sometimes so intense that water freezes in household utensils in the immediate vicinity of a red hot stove. This intense cold is not, however, so severely felt as one would suppose, because, while it lasts, the air continues perfectly still. The slightest breeze would instantly freeze the face with which it came in contact, and would prove a sufficient warning to prevent any one from venturing out. This dry cold is, however, very healthy ; much more so than the heat of summer, which is intolerable during some weeks, and which engenders such quantities of flies and mosquitos as to

render the country almost insupportable. Strange as it may seem, in this cold country, mosquito nets are, for a certain length of time, as essential as in the torrid zone. In vain does one fill his room with thick smoke, by burning in it powder or damp moss; nothing can completely insure him against the attacks of these formidable enemies.

Vegetation. — Although, beyond the 56th degree of north latitude, the subsoil is perpetually frozen at a depth of some feet below the surface, trees grow in certain places as far as 64 degrees. Farther still, the gloomy and majestic forests of larches and firs give place to the birch, which creeps on the ground; finally, nothing is to be seen but plains covered with lichens and mosses, with here and there a few spots clothed with thin and slender grass, which grows in summer along the rivers and lakes.

In the southern part a few settlements have been founded, like that of the Red River, where all kinds of cereals are cultivated, and promising one day to become prosperous colonies; but the country is generally covered with dense and almost primeval forests. Nothing can be more imposing than the spectacle of these gigantic and veteran fir trees, which often, sinking beneath the weight of years, cause the destruction of others which are adjacent to them. The *ice storms*, so called, are especially terrible in these regions. After a thick layer of snow has fallen, if there supervene a temporary thaw, or a slight rain, soon followed by severe cold, the frost clothes the firs and their branches with a heavy vesture of ice, beneath which the tallest trees bend and stagger in the slightest breeze. On a calm day, it is impossible to imagine any thing more beautiful than the reflection of the sun upon these branches, where every icicle sparkles like a cluster of diamonds. But if a hurricane arises, and one of these heavily-laden firs sinks beneath the weight of ice, and is precipitated upon those contiguous to it, the latter carry with them others, and the whole forest, uprooted as by an avalanche, falls with a wild crashing, which resounds to a distance like the discharges of artillery.

The only fruits are wild berries, in which the woods abound. Black and red *currants* and *gooseberries* are found in very great

profusion ; but the former are bitter and the latter small. The *marshberry* resembles the raspberry in form ; it is of a pale yellow color, and grows on a stunted bush almost close to the ground. *Strawberries* are likewise found in abundance in all these regions. Another substance, which may also serve for food in extreme cases, is a species of lichen which grows on rocks, and to which the Canadians have given the singular name of *rock tripe*. This lichen resembles a dried sea weed, and the most imperious hunger alone would enable one to relish it. Hunters, after grating it on stones, boil it, and extract from it a gelatinous substance, even less nutritious than the Iceland moss, but which may for a short time appease the cravings of hunger.

Labor is extremely repugnant to the nature of the Indians, who are wont to say that the Great Spirit made the white man to cultivate the earth, and the red man to pursue the chase. If they possessed a disposition for agriculture, it would prove of no avail, at least throughout the greater portion of these vast territories, for in this rigorous climate the Europeans themselves can neither raise legumes nor potatoes. The chase, with all its uncertainties, which render it so disastrous a dependence to populations utterly destitute of foresight, affords almost the only resource of the wandering tribes of natives ; divine goodness has, however, endowed them with fish and game in more than ordinary abundance, to say nothing of the profits which they realize from the magnificent furs that are furnished by most of the large animals which inhabit the forests and plains, even upon the borders of the Arctic Ocean.

The *animals* of the Hudson plain are nearly the same as those of the boreal plains of the old world, and the greater part are sufficiently known to us. For taking game of ordinary size, the Indians and whites make use of snares, or traps of wood or iron, which, seizing the animal by the paws, or nose, possess the advantage of doing no damage to its precious fur. Besides the black fox, there are silver foxes, white and black foxes, and red foxes, whose skins are valuable. The *marten* furs are now one of the most profitable articles of the fur trade ; those of the *otter* and *lynx* are also of importance ; those of gluttons, badgers, wolves, and bears are of much less value. The *beaver* was for a long

time the principal object of commerce among the fur companies, but the silk hats of Paris have wonderfully diminished the demand for it. In consequence of this invention the beavers are no longer pursued with the same avidity, but suffered to build their habitations unmolested. Every one is aware of the ingenuity which these animals display in their astonishing constructions. Collected in numbers of from 200 to 300, towards the months of June or July, they first select a favorable location on a watercourse, which will permit the floating of their materials. In order to obtain a constant level, they are first obliged to dam the river, by means of a dike. With the aid of their powerful teeth they gnaw a tree on the bank of the river, in such a manner that it falls across the stream, and serves as a foundation for all their subsequent labors. They then trim it, fell other smaller trees higher up the river, and cut them in the form of piles, which they float upon the water, and place vertically against the large trunk of the tree, by digging, at the bottom of the water, holes



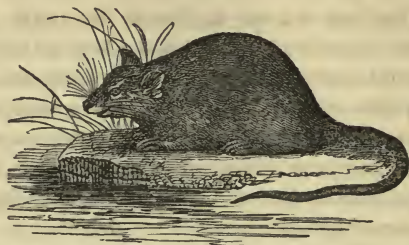
Beavers.

designed to receive the extremity of these stakes. Thus is formed a very compact framework, after which other beavers bring flexible branches and interweave them with the stakes. Others go

in search of earth, knead it with their feet, beat it with their tails, and then form it into balls, which they transport with their teeth, and with which they cement their masonry. Many rows of piles are thus planted, one in front of the other, so as to raise the water to the requisite height. If the beavers can conveniently find a lake of a permanent level, it is scarcely necessary to add that they dispense with all these labors, and proceed immediately to the erection of their huts. The latter, which are built on the borders of the water, are of an almost circular form, and of a size varying from 4 to 8 or 10 feet in the diameter of the interior, according to the number of inhabitants which they are destined to contain. The walls, of about two feet in thickness, are first raised vertically, and then surmounted by a kind of dome. This habitation is almost always divided into two stories, the lower of which serves as a storehouse for the bark and tender branches which are designed for winter provisions. A door opening towards the water, in this part of the house, enables the occupants to issue thence by diving. The upper story is more particularly intended for the habitation, and the beavers keep it always in a state of perfect neatness. It is a piece of good fortune to trappers to encounter a village of beavers completely benumbed by the cold, overthrow their huts, and seize the animals incapable of flight or of self-defence, and in an extremely plump condition. In proportion, however, as hunters and civilization invade the solitudes of Hudsonia, the villages of beavers become more rare; the animals which survive disperse, and evince, in their state of isolation, none of that singular intelligence which is closely associated with their building instinct and social life.

Another little animal, whose habits have much affinity to those of the beaver, and whose fur is much esteemed, is the *muskrat*, which owes its name to the strong odor of musk which it exhales. This is a rodent of the size of a rabbit, but with shorter legs; its hind feet are half webbed, and it has a scaly tail, as long as its body. They display in their constructions almost as much ingenuity as the beavers; but as they establish themselves on the borders of ponds, whose waters are naturally stagnant, they have no occasion to construct dikes, like the former. The external form of their habitations is that of a dome; the materials are

rushes interwoven and plastered with clay. These huts often form species of villages, where the animals immure themselves



Muskrat.

during the winter ; in the spring they disperse in couples, in the high lands

The *buffalo*, or *bison*, is also, in these regions, one of the principal objects of the chase, no less on account of its flesh than of its skin. The buffalo meat is the favorite food of the whites and Indians, who dry, smoke, and prepare it in many ways. Among other modes of preparation, they convert it into a substance easy of transportation, and which, under a light bulk, contains much nourishment: this is the *pemmican*, a mixture of melted fat and dried meat reduced to powder. It is eaten raw or boiled ; one or two pounds, and even less, suffice for the daily nourishment of a man, and the whole produce of an animal weighing about 80 pounds may be contained in a sack of buffalo skin. It is, however, to be regretted that this food, although perfectly wholesome, is of a very uninviting appearance.

Near the coasts of the Arctic Ocean many *ptarmigans* are met with, which are, as we have already observed, excellent game ; also *white bears* of very great size ; considerable herds of *reindeer* ; and *musk oxen*—singular quadrupeds, of which we have not yet had occasion to speak. The *musk ox*, or *ovibos*, (that is to say, mutton ox,) has much more of the aspect of the sheep than that of the ox, with its extremely short legs, covered, as well as its whole body, with very long fur, beneath which is found a silky, short, and thick hair. Notwithstanding their heavy forms, these animals run with rapidity, and climb steep rocks with the

agility of the chamois. They are the habitual companions of the reindeer, subsist like them on buds and the bark of trees, in the season when grass has entirely disappeared beneath the snow, and seem to revel in their fearful deserts, as the cattle of other climates luxuriate in their rich pastures. They go in troops of 30, 50, and even 100 individuals. With their horns first flat against the head, and then projecting outwardly in a sharp point, these animals, though of smaller size than an ordinary ox, are very formidable to the hunter who has wounded without killing them. They diffuse a decided odor of musk, notwithstanding which the people eat them with relish.

Population. — With the exception of a small number of colonists established on the banks of the Red River and Lake Winnipeg, there exist in Hudsonia few whites, except the missionaries and agents of the great *Hudson's Bay Fur Company*, whom the English government has invested with the sovereignty of these countries, and who have founded at certain distances wooden forts, designed to serve as markets for the exchange of furs, and as a protection for European merchants. The task of obtaining the products of the chase from the Indians, and supplying them with the counters of the company, rests on the Canadian *voyageurs*, (as they are called,) who pass their lives in rowing over the rivers, or in hunting, fearing neither mosquitos, the ice, nor the lance of the Indian. They read their route on the mossy trees, divine the places where the savages are stationed at different periods of the year, and after a pursuit of eight days, invariably overtake the animal or enemy that attempts to elude their search. These Canadians have for aids the half breeds, (descendants of Indians and whites,) commonly called *bois-brulés*. The latter associate with the white voyagers more willingly than with the red skins; all are baptized, and although their life is still roving, they have at least ceased to be nomadics, and it is always in the neighborhood of the trading posts that they fix their abode.

The agents of the company pass the greater part of the winter in the endurance of excessive ennui, behind the palisades of the forts which protect their dwellings. Whoever breaks the monotony of his long seclusion by venturing forth must take great

precautions against the slightest breath of wind. If the air is perfectly calm, he is enabled to hunt the ptarmigan and the partridge; but in what a costume! his neck is encompassed by a large shawl, whilst his head disappears from view beneath a ratskin, which conceals his ears and a part of his face; his feet are encased in three pairs of woollen socks, and the Indian shoes known by the name of *moccasans*; fur mittens envelop his hands, and underneath his deerskin trousers he wears close-fitting gaiters of cloth; he dons a leather hood, lined with flannel and wadded with fur, which gives him the aspect of a gray bear. If by chance the snow is soft, he is obliged to add a pair of snowshoes, to prevent his sinking in it, but which compel him to walk with his legs apart, lifting the knee as high as his waist.

The *snowshoes*, or *rackets*, of which the Indians or Europeans of these regions generally make use, have no resemblance to a shoe. They are composed of two very light and slender pieces of wood, which, bound together at their two extremities, form towards the centre an oval, covered with a network of bearskin, and strengthened by other pieces of wood placed crosswise. They are from 4 to 6 feet in length, and from 1 to 2 in width, and are attached only by a very loose band of leather, which passes over the great toe. As they are not heavy, they occasion no fatigue to those who know how to use them. The snow is so deep in this country, that without their assistance it would be absolutely impossible to walk during many months of the year. Every time that the traveller raises his foot, the snow falls through the meshes of the net. The Indians often accomplish with these rackets 7, 10, and even 12 leagues in a day. But in damp weather, the half-melted snow clogs up the meshes, the racket becomes heavy, and often severely wounds the feet, insomuch that it frequently occasions the loss of the nails.

The native populations are wholly independent, and maintain with the English only relations of exchange in the commerce of furs. The northern shores are occupied by the *Great Esquimaux*, of a little smaller stature than that of the natives of Labrador, and whom travellers represent to us as mild, timid, destitute of courage, and reduced to an extremely savage condition; they live only by fishing and hunting. The *Indians*, or *red skins*,

inhabit the interior; they have no fixed habitations, and transport their huts wherever they hope to find an abundant chase. The dog is their only domestic animal, and they willingly eat its flesh. Polygamy reigns generally among these tribes, and the severest labors are always imposed upon the women. A great lighted pipe, circulating from mouth to mouth, is, among them, the token of friendship, and is called the *calumet of peace*. Next to the chase, war was formerly their principal occupation; it was carried on rather by stratagem and ambuscade than by open attacks, and the fate reserved for their prisoners was a protracted death amid the most horrible tortures, or the chance of being sold as slaves. Their manners are now a little softened, and the custom of *scalping*, that is to say, of removing the skin of the forehead and head, with the hair, is little practised except upon dead enemies. Brandy, small pox, and famines, the consequences of improvidence, are the great scourges which decimate these populations. The principal tribes are those of the *Chippewas*, who dwell south of the Great Esquimaux, and wage continual war with them; the *Knistenaux*, who occupy the gloomy plains south-west of Hudson's Bay; the Sioux tribe, which bear the name of *Assiniboins*, south-west of Lake Winnipeg, and near the frontier of the United States, the *Ojib-be-ways*. A portion of these Indians have become Catholics, and are visited by very zealous and active missionaries. In the midst of other tribes are established English Protestant missionaries, who have organized many large and flourishing churches. The great obstacle which they encounter is not merely the profound ignorance, superstition, and cunning of the priests, or Indian sorcerers, but the dissemination of the natives, which obliges them to travel hundreds of miles, sometimes in canoes, and sometimes in sledges drawn by dogs, in order to visit the savages in their nomadic encampments, and instruct them in the knowledge of the gospel. Nevertheless, by means of devotion and perseverance, admirable results have already been achieved.

SECT. 7. LAKES OF AMERICA.—Even the largest lakes of the old world appear insignificant when compared with the extent of those of the new. The American lakes contain more than half of the fresh water of the globe, and it is assuredly a great

benefit to mankind that Providence has thus located these liquid masses in the heart of a continent impenetrable to the waves of the two seas. By tempering the extremes of the climate, and facilitating general communications, such a system of natural canals, accessible to vessels of 400 tons, and connected together by railroads, will present, in a few years, the masterpiece of contemporary industry, combined with the best employment of the material resources of the globe.

LAKES OF THE NORTHERN PLAINS OF NORTH AMERICA. — The lakes of these plains are almost innumerable. The whole country is interspersed with lakes, ponds, or rivers, which, at the time of high flood, wander from one basin to another, and serve little purpose except for facilitating, during the favorable season, the passage of the fur merchants from one place to another, in their canoes. The principal of these lakes are the *Slave Lake*, (100 leagues in length, and from 50 to 60 in breadth,) sprinkled with islands which produce a few trees, but frozen during the greater part of the year; *Lake Athabasca*, or Lake of the Mountains, around which flourish firs, larches, birches, and alders; and *Lake Winnipeg*, (60 leagues in length, and from 30 to 40 in breadth,) whose borders are overshadowed by sugar maples and Canada poplars, whilst wild rice grows uncultivated in the vicinity, together with hemp, barley, and rye, which the English colonists have introduced even into these regions.

THE GREAT LAKES. — The principal of these lakes are five in number — *Superior*, *Huron*, *Michigan*, *Erie*, and *Ontario*. The first, situated at the north-west, is the largest lake of the new world, and its surface is almost equal to that of the whole of England, (135 leagues in length, and 60 in breadth.) Its waters are transparent, deep, and very productive of fish. Tempests are of frequent occurrence upon this lake, and often more severe than upon the ocean itself. Its surface is more than 600 feet above the level of the Atlantic, and it is nearly 1000 feet in depth. The shores of this beautiful lake, or rather of this fresh water sea, which seemed condemned to barbarism and neglect, are beginning to be civilized and populated. On the southern coast, rich veins of *copper* have already been discovered. Subsequent researches have brought to light still greater riches on the northern coast,

as likewise gold, silver, and tin bearings, which may also acquire importance.

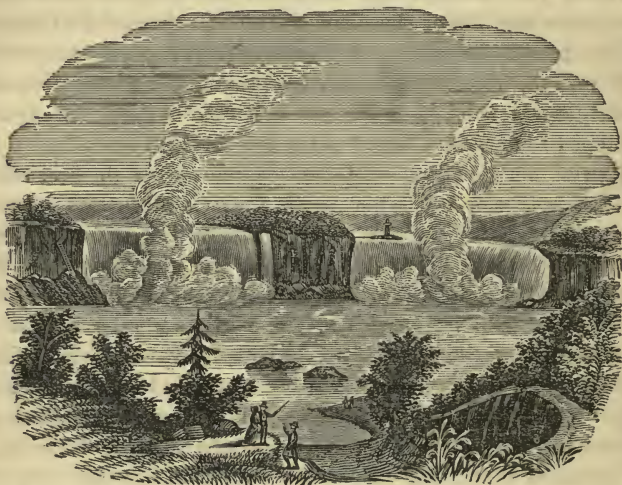
At the south-eastern angle of this basin are a succession of *rapids*, called the *Falls of St. Mary*, through which Lake Superior pours its waters into *Lake Huron*. This is a kind of low cataract, nearly a mile long, whose waters violently precipitate themselves from one declivity to another. It would be difficult to portray the magnificence of this fall, which resembles a white and foamy sea. Excellent *salmon trout* are caught there, weighing as many as 40 pounds. All the vegetation of North America seems to have concentrated itself around the vast *Lake Huron*. With the exception of the slender American larch, or tamarack, all the trees of these gigantic forests acquire a prodigious size — the elm, oak, white pine, ash, and especially the plane trees, frequently attain from 15 to 26 feet in circumference. Many fish are taken in this lake, where every one may fish according to his pleasure. In winter, great holes are pierced in the ice, which the fish approach to breathe the air, and where the line is sunk ; every morning, the Canadians, in their bark sledges, traverse the ice on the borders of the lake, to visit the apertures at the entrance of which they have spread their bait. In summer they make use of the harpoon. The finest prizes that are taken in these deep waters are *salmon*, of 50 or 60 pounds weight. *Sturgeons* are also harpooned there, from 4 to 5 feet long, and whose bodies are covered with tubercles. The sturgeon may be considered the king of the American rivers and lakes.

Lake Michigan, with fertile and well-wooded banks, empties its waters, at the north, into Lake Huron ; it presents nothing very remarkable. It is furrowed by an even greater number of steamboats than the preceding lakes.

Through the *River St. Clair*, Lake Huron communicates, at the south-east, with the small circular lake of St. Clair, whose waters flow through the *Detroit River*, into the fourth of our great lakes — that of *Erie* — a basin of comparatively little depth, but exposed to tempests and dangerous fogs.

From its north-eastern extremity issues the broad *Niagara River*, which, after being restricted towards the middle of its course, becomes more and more rapid, and soon forms the finest

cataract in the world, the celebrated *Niagara Falls*. The river, of about a quarter of a league in breadth, is divided by *Goat Island* into two unequal parts, of which the least in breadth, that of the south, falls from an elevation of 162 feet, while that of the north falls from 150 feet only. In the centre of the Horseshoe the sheet of water is said to be 20 feet in thickness, and it is estimated that it precipitates about 5,000,000,000 barrels of water in 24 hours. Moreover, the hydraulic power of the falls has been computed to be equivalent to that of 4,500,000 of horses — more than would be required to set in motion all the manufactories in



Niagara Falls.

the world. Thus the earth trembles in the vicinity, and the tremendous and incessant roaring of the cataract constitutes the loudest report that ever greets the ear of man; it is like the rolling of many thunders, and the Indians have justly bestowed upon this place the name of *Niagara*, (thunder of waters.) When the weather is favorable, the roaring is heard for 15 or 20 leagues, and the perpetual cloud of mist which rises above its boiling waters may be seen at a distance of 25 leagues. From the summit of a tower, erected between the two falls, the glance

embraces at once the two divisions of the cataract, the white vapory waterspout issuing from the gulf, and the double rainbow, which, created by the reflection of the sun's rays, is almost constantly suspended above it. From the two sides of the island, the water of the river does not seem very rapid; but if one placed his foot in it, he would inevitably be swept away. Many accidents are alleged to have occurred in consequence of acts of bravado or imprudence of this nature. On the Canada side, one may advance to the foot of the rock, beneath the vast sheet of water; but this promenade is more extraordinary than agreeable.

Below the cataracts the waters of the Niagara precipitate themselves into *Lake Ontario*, a magnificent sheet of 200 leagues in circumference, whose borders, still thickly wooded, are covered with rich towns or villages, manufactories, and beautiful plantations. The largest vessels can navigate this lake, but are exposed to frequent hurricanes, and find but few good ports.

LAKES OF MEXICO. — Mexico contains a certain number of lakes of greater or less extent, none of which, however, are so celebrated as those of the city of Mexico. In the centre of an immense plain formerly extended a great basin, whence rose, like another Venice, the Mexico (or rather the Tenochtitlan) of the ancient Aztecs. The Spaniards, after the conquest, desired to drain it; but they only partially succeeded. From the great lake have been formed three of small dimensions, which surround the city. Every where, at a few feet below the soil, are found sheets of brackish water, the unwholesome use of which engenders dropsy, a malady very frequent in this country.

In these lakes the Indians have bound together the trunks of trees, so as to make vast rafts, which they have then covered with a layer of vegetable earth. They sow this earth with all kinds of nutritious plants and fragrant flowers, which may be easily watered at any hour in the day, and these artificial islands, or floating oases, which are called *chinampas*, have become the kitchen and flower gardens of Mexico. If, seated in a gondola, one glides among the *chinampas*, barefooted Indians will come to the borders of their islands to offer him exquisite fruits, and flowers of the most odoriferous perfumes, whilst multitudes of humming birds, flitting from chalice to chalice, sparkle around him, glistening, as it were, with gold, rubies, sapphires, and emeralds.

LAKE NICARAGUA. — This lake, the largest of Central America, is about 60 leagues in length, and 25 in breadth. It is navigable for small vessels, but subject to violent storms. Its bottom is slimy; its borders carpeted with mangroves, bananas, and ebony trees. Islands clothed with rich verdure give the landscape a very picturesque character. The usual transparency of this basin is sometimes disturbed by the eruptions of a volcano, situated in one of these islands. A subterranean convulsion appears to have separated Lake Nicaragua from that of Leon, situated at the north-west.

Public attention has, within a few years, been particularly directed towards this lake, because it has been thought that it might facilitate the construction of a canal across Central America, and thus enable ships passing from one sea to another to dispense with the necessity of circumnavigating Cape Horn. Lake Nicaragua has no outlet towards the Pacific Ocean, from which it is separated by a tongue of land only five leagues in breadth; all its waters descend to the Caribbean Sea through the River San Juan. But this river forms a considerable number of falls, and would require a canal; moreover the lake is 120 or 130 feet above the level of the ocean, and lacks depth at its two extremities. These are serious, but not insurmountable obstacles, and the project is not abandoned.

LAKE MARACAYBO. — Lake Maracaybo, 50 leagues long, and 30 wide, communicates with the Caribbean Sea, but its waters are habitually fresh; the tide, however, exerts a sensible influence, and the lake is navigable even for vessels of considerable size. It furnishes much *asphaltum*, which, mixed with tallow, is used for tarring ships. The bituminous vapors which hover over the surface of the water often become inflamed, especially in periods of extreme heat. Its shores are so unhealthy that the Indians, instead of fixing their abode upon them, prefer to reside on the lake itself. The Spaniards found there many villages constructed on piles, (whence this country received the surname of Venezuela — Little Venice.) The largest quantities of bitumen are accumulated, principally in the southern part; when inflamed, they aid the pilot in recognizing the coast by night: thus they are known in the country by the appellation of *lanterns of the Maracaybo*.

LAKE TITICACA. — The great *Lake Titicaca*, 62 leagues in length, with angular and singular outlines, is one of the most elevated fresh water basins that is known, being more than 12,000 feet above the level of the ocean, higher than the Peak of Teneriffe. It contains many kinds of fish; its shores are cultivated, and produce wheat, barley, and potatoes; a numerous population of Indians inhabit the towns and villages on its borders. This lake receives the waters of 12 or 13 rivers, but it only gives rise to the *Desaguadero*, which disappears in a lagoon, or in sandy soils. In one of the islands of this lake the famous Manco Capac pretended to have received his divine mission to become the lawgiver of Peru. It was also in the deep waters of this basin that, according to tradition, the Indians, conquered by the Spaniards, buried most of their treasures, and especially the great golden chain of the Inca, Huanca Capac, which was 750 feet in length.

A chain of lakes and lagoons follows the eastern base of the Andes, from Paraguay to the extremity of Patagonia; but the greater part, after inundating the country to a distance, at the period of the tropical rains, dry up or are metamorphosed into vast marshes. Such is the case with *Lake Xarayes* (Paraguay) and many others. Of these lagoons, some are fresh and others salt, but all are alike destitute of importance and interest.

SECT. 8. RIVERS OF AMERICA. RIVERS WHICH FLOW INTO THE ARCTIC OCEAN. — Rivers are among the treasures of America. In no other country do they possess such an extensive course, or roll such enormous masses of water; but up to the present time, they have not been made as available as they will undoubtedly be hereafter; the climate will, however, always present an almost insurmountable obstacle to the navigation of those which empty into the Arctic Ocean or Hudson's Bay.

The *Mackenzie River* commences at Mount Brown, by *Athabasca River*, which flows into Lake Athabasca, and receiving *Peace River*, enters Slave Lake, issuing from which the Mackenzie flows north-west as far as the Arctic Ocean. It has a course of more than 2500 miles; this is the counterpart of the magnificent rivers of Siberia.

The *Nelson River*, which pours its waters into Hudson's Bay,

commences also at the Rocky Mountains by the two *Saskatchewan* Rivers, which, after their reunion, enter Lake Winnipeg, and subsequently shape their course towards the sea, in a north-easterly direction.

RIVERS WHICH FLOW INTO THE ATLANTIC. — The *St. Lawrence* is less a river than a long strait or canal of fresh water, through which flow the great lakes of North America. From Ontario to Quebec, it is at least 3 leagues in breadth; thence, as far as the sea, it averages from 15 to 20. In the portion where its course is most limited, — near Montreal, for example, — the river presents an extremely picturesque aspect; villages and steeples, rocks and forests, are reflected in its deep-blue waters, and different points of view every moment reveal themselves. This is the great medium of communication between the different parts of Canada, and every successive year it is plied by an increasing number of ships and steamboats. But the mouth of the *St. Lawrence*, although situated in the same latitude as that of the *Seine*, in France, is obstructed by ice during several months of the year, and its navigation is forcibly interrupted.

The *Mississippi*, which the Indians had surnamed, in their poetical language, the “Father of Waters,” is one of the largest rivers in the world. It has a course of nearly 4500 miles, and of a hundred rivers which it receives, 30 are navigable and covered with numerous steamboats, which facilitate and multiply communications in these immense plains, where the scarcity of roads and the insufficiency of the population would render transportation by land almost impracticable.

This vast watercourse has two principal sources, the *Mississippi*, which, rising among the hills that separate the northern plains from the savannas of the *Mississippi*, flows from north to south; and the *Missouri*, which proceeds from the west, from the Rocky Mountains, and whose course and volume of water are much more considerable. The former has clear and transparent waters, and a moderate current. The latter, which almost constantly traverses sandy plains, amid which it makes innumerable windings, is encumbered with islands and sand banks; its water is muddy, its current rapid, but its navigation not difficult except in the time of the greatest drought.

Below the junction of these two rivers, the Mississippi presents views of surpassing beauty. Its bed is little more than a league in breadth, and its miry waters form a complete contrast to the transparent and beautiful waves of the St. Lawrence. But the power of this giant of the North American rivers is manifested in the rapidity of its current, in the whirlpools which it creates, in its depth, which attains as many as 120 feet, and finally in those colossal trees, which are drifted by the river, and which, caught and retained on the sand banks, damage and sometimes suddenly founder steamboats which are ascending or descending. A part of these woods are arrested at New Orleans; but upon digging in the delta which the Mississippi forms at its mouth, in the Gulf of Mexico, many forest trees are found, heaped one upon another in successive layers. During nearly the whole extent of its course, the *Father of Waters* is bordered by magnificent forests, which are, however, beginning to be superseded, in numerous places, by cities or cultivated fields. A little above its delta, near New Orleans, the river is more elevated than the neighboring lands, and retained only by feeble dikes, which accounts for the fact that as one sails upon it the houses and trees on the shore appear to be half sunk beneath the water. Sometimes, also, terrible disasters result from this circumstance at the period of the inundations. A *bar*, (sand bank,) very difficult to surmount, obstructs the river at its mouth. Serpents, mosquitos, venomous insects, and the yellow fever are the principal scourges of this country.

The most important affluents of the river are, on the left, the *Illinois*, which traverses immense prairies, and the *Ohio*, (or Beautiful River,) which resembles a canal, dug in a pleasure garden, in the midst of superb forests of gigantic plane, maple, tulip, and magnolia trees; on the right, the *Missouri*, with its various tributaries, the *Yellow Stone*, the *Platte*, the *Kansas*, and the *Osage*; lower down, the *White River*, the *Arkansas*, and the *Red River* issue from the Rocky Mountains, and swell the Mississippi with their muddy but salubrious waters.

The *Rio Grande del Norte*, after traversing New Mexico, empties into the Mexican Gulf. In the upper part, its navigation is impeded in summer by the want of water, and in the lower portion by sand banks.

The *Orinoco*, in South America, is a large river, which rises in the chain of the mountains of Guiana, flows first south, then west, and north, and finally east, and after a course of more than 500 leagues, interrupted by many rapids and cataracts, it empties into the Atlantic by numerous mouths, which form a very extensive delta. The *aspect* of the Orinoco is magnificent. Its banks are almost every where covered with impenetrable forests, and majestic trees, which are linked together by the *beyuco*, a gigantic climbing plant, as large as a cable; dead trees, of centennial growth, are sustained upright by these immense plants, which are often confounded with the enormous water snakes that are constantly lurking in these marshes. Among the branches gambol monkeys of every species; through the underwood may be descried openings, made by the animals which frequent the river side to quench their thirst or pursue their prey — wild oxen and horses, jaguars, stags, &c. *Alligators* stretch themselves in the sun, and sleep motionless on the shore. These amphibious monsters acquire enormous dimensions in these rivers: if surprised on land they suffer themselves to be killed almost unresistingly; they are chiefly to be dreaded at the period of the inundations, the more so, that when they have once tasted human flesh they become ravenous for it, and destruction then awaits the solitary bathers, or women who come thither to draw water. These dangerous animals devour great numbers of calves and colts, when the river, suddenly rising, rapidly invades the vast llanos covered with wild cattle. Besides these alligators, the Orinoco and its affluents nourish a small fish, of an orange-yellow color, only from three to five inches long, but so fond of human blood, that the name of *carib* has been bestowed upon it. If one is wounded by them, ever so slightly, hundreds flock to the spot, allured by the odor of the blood, and it becomes difficult for him to extricate himself from their sharp fangs. In a hot climate, where river bathing is a daily necessity, the existence of such a fish is an actual scourge; thus the people dread it even more than they do the alligator. The *great gymnoti*, or *electrical eels*, also abound in these waters. In order to procure them, numbers of wild horses are chased from the savanna into the marshes where they exist, upon which animals these fish, resembling

aquatic snakes, discharge their fluid by repeated shocks. Many of the horses, exhausted, panting, and driven into the interior of the marshes, from which they are attempting to escape, sink under the violence of these shocks; but after a certain time, the



Electrical Eel.

gymnoti, whose electrical power becomes exhausted, suffer themselves to be taken by means of small harpoons, attached to long lines, and are afterwards sold to figure in menageries, where some are exhibited of more than five feet and a half in length, and weighing as many as 15 pounds. The principal affluents of the Orinoco are the *Caroni* on the right, the *Meta* and the *Apure* on the left.

The *Maranon* or *Amazon River*, so called on account of the imaginary population of female warriors whom the early discoverers fancied they saw upon its borders, is unquestionably the largest river the world. It rises in the Andes of Peru, at 12,000 feet above the sea, flows north, and descends rapidly as far as the narrow pass of Manseriche, where it enters the plain, and begins to take an easterly course. At 500 leagues from the sea, the Amazon is already nearly a league in breadth; lower, the river, whose depth attains as many as 300 feet, forms as it were a sea of fresh water, which has its tempests, its trade winds, and which receives from the ocean the impetus of the tide. After a course of 4000 miles, it flows into the Atlantic by two mouths, one of which is 20 leagues in breadth, and the other 8. The power of this immense body of water is such, that it repels the water of the sea, and flows without mingling with the latter for a space of from 60 to 80 leagues. The Maranon annually overflows, cover-

ing a space of fifty leagues in breadth. It contains a vast number of islands. A regular line of steamboats has recently been organized on this beautiful river, and thus the products of the Andes of Peru and Bolivia may be brought into communication with other parts of the world without being obliged to encounter the perils presented by the passage of Cape Horn.

A curious phenomenon of the mouth of the Amazon is the *bore*, which occurs especially during the two days before and two days after full moon, the time of the highest tides. Three or four enormous waves, of from 10 to 20 feet in height, rush into the river with irresistible force, and which precipitate themselves along the shore, sweeping away every thing which opposes their fury. The tide, instead of requiring six hours for its increase, attains its greatest height in a few moments. The roaring of the bore is heard at nearly two leagues distance. This is the *bar of the Gironde* on a larger scale.

An occupation peculiar to the borderers of this river is the manufacture of the *butter*, or, more strictly speaking, the *oil of the tortoise*. At the time of the laying, these amphibia arrive by thousands upon certain sandy shores, for the purpose of depositing their eggs. The mere collision of their shells, as they clash on the banks, creates a report which may be heard at a distance. The laying commences at sunset and terminates at dawn. Each tortoise, after having deposited 60 eggs at least, and 140 at most, retreats, and the shore is finally deserted. The inhabitants of the vicinity then assemble and collect them, under the inspection of government agents, authorized to levy slight taxes upon them. This being done, the eggs thus collected are thrown into a boat, which has previously been carefully cleansed; there they are crushed, both under foot and with sticks. From them escapes a yellow liquid, mixed with foam, to which is added a certain quantity of water, after which the mixture is left for a whole day, exposed to the heat of the sun. The heat brings to the surface the oily portion of the eggs, which is then removed by means of ladles, placed in kettles, and subjected to a slow fire. This species of fat gradually clarifies, and acquires the consistency and color of melted butter. Thus this substance, usually put up in large earthen pots containing from 40 to 60 pounds, is known in

commerce under the name of *tortoise butter*. It is used for the seasoning of dishes, or (when of inferior quality) for the lighting of houses; but it always preserves a certain rancid, disagreeable odor.

The principal affluents of the Amazon are, on the right, the *Ucayale* and the *Purus*, proceeding from the Andes of Upper Peru, the *Madeira*, (or River of the Woods,) the *Tapajos*, the *Xingu*, and the *Tocantins*, or *Para*, (which receives the *Araguay*,) all of which rivers descend from the mountains of Brazil; on the left, the *Japura* and the *Rio Negro*; the latter is remarkable for the natural canal which has established itself between this river and the *Cassiquiare*, one of the affluents of the Orinoco, a communication which might render immense services to less scattered and more industrious populations.

The *Rio de la Plata*, or *Argentine River*, a name which this river bears only at its mouth, traverses the pampas from north to south, and empties into the Atlantic after a course of 800 leagues. It is composed, properly speaking, of three great rivers: 1. The *Paraguay*, in the centre, issuing from the Campos Parecis, and which forms, during the rainy season, the temporary Lake of Xarayes; 2. The *Pilcomayo*, which descends from Upper Peru; 3. The *Parana*, which rises at the north-east, among the mountains of Brazil. After the junction of these three principal branches, the river also receives from the Andes the *Rio Salado*, and at its mouth, in the Bay of La Plata, the *Uruguay*, which issues from the southern extremity of the mountains of Brazil.

All these rivers are replete with islands, which produce great numbers of different animals: such are the *coypon*, (myopotame,) a species of large water rat, of a brown color, whose coat somewhat resembles that of the beaver, and has also been employed in the hat trade; and the *cabrai*, one of the largest rodents known, (three feet in length and one and a half in height,) with stiff and smooth hair, and thick-set form, and which swims with perfect ease by means of the membranes which unite its claws; its flesh is esteemed an excellent article of food; when caught young, it is susceptible of being tamed. Other animals also—jaguars, cougars, caymans, squirrels, and monkeys, inhabit these islands, and usually present themselves to the view of those who

pass their borders. Sometimes, during the sudden risings of the Parana, considerable portions of the islands become detached, and float along the shore. The intertexture, formed by the roots of the vegetables which grow upon them, prevents them from crumbling, and these *camlets* may be seen descending with the current for many leagues. The animals which chance to be upon them at the time of the catastrophe are carried away with the soil that had served them for an asylum, and the terror which they experience usually renders them motionless. It is related that a camlet, a few years ago, transported three jaguars to the city of Montevideo; entering which at daybreak, they suddenly sprang upon a liquor merchant in the act of opening his shop. A great number of persons were wounded before these three animals could be killed.

RIVERS WHICH FLOW INTO THE PACIFIC OCEAN.—The *Columbia River* is the most remarkable of all the rivers emptying into the Pacific Ocean. It rises in British America, on the west slope of the Rocky Mountains, and flows south and west into the ocean. This river, which can be ascended for 140 miles from its mouth by vessels of considerable size, is separated from the sea by a dangerous sand bar, at certain seasons even insurmountable; elsewhere rapids and falls obstruct navigation in the upper part, for which reason this river, although very beautiful, and from one to five miles broad, cannot render such important services as would at first be supposed. Its banks, however, are richly wooded with pines and other gigantic trees, and its waters contain a great abundance of fish, and especially *salmon*.

The rivers of California, the *Sacramento*, the *San Joaquin*, though comparatively small streams, have become celebrated from the extensive and rich gold region through which they flow.

SECT. 9. PRINCIPAL ISLANDS OF AMERICA. ARCTIC LANDS.—The portion of the Arctic Ocean which washes the northern coasts of America forms a vast archipelago of islands, still imperfectly known, discovered by the bold navigators who, from the commencement of the 16th century, had, until the last year, vainly sought a northern passage conducting from the At-

lantic to the Pacific Ocean. This archipelago is composed of numerous bodies of land, generally of little elevation, separated from each other by narrow straits, and covered the greater part of the year with snow and ice, the soil, at most, only thawing to a foot's depth during the summer.

The *climate* of these countries is uncommonly cold. However, the summers, which are very short, are sometimes of such intense heat as to melt the tar on the sides of ships, and dissolve and disperse the immense fields of marine ice which the winds drive hither and thither, and which, becoming accumulated in the straits or bays, menace vessels with the most shocking disasters. At this period, the reflection of the sun's rays upon the snow, frequently occasions severe diseases of the eyes. Travellers, who visit these shores, are sometimes even smitten with blindness. In hot summers the ice breaks up in the month of June, and does not form again until towards the end of August. At other times it does not disperse during the whole year, and the vessels of certain navigators have thus been blockaded for two or three years in succession. The cold of the winter is such that water placed in bottles, borne on the bodies of sailors, travelling on foot, freezes almost immediately; the fat of pork becomes brittle; the faces and limbs of individuals are frequently frozen. Whenever any food is cooked on board ships, or in the camp huts, constructed of blocks of ice, the vapor which escapes from it immediately descends in the form of snow, so fine that it penetrates all one's clothing, furs included. The sun is invisible during three or four months; but it must not be supposed that during this protracted night, uninterrupted darkness envelops the earth. As the star of day descends but little more than 18 degrees below the horizon, the arctic regions constantly enjoy the benefit of a twilight whose brightness the ice and snow singularly augment; so that, independently of the auroræ boreales, which are very frequent, it is possible, even in the middle of winter, to read the finest writing without difficulty at midday, as tested by the experiment of Captain Parry.

Vegetables are naturally the poorest feature of these countries. Little has been found in the most northern of these islands except a species of *dwarf willow*, (*tetragona andromeda*,) with stalks

of the size of a pipe stem, which usually creep on the surface of the soil, and serve as food for the reindeer or fuel for navigators; a little turf, of a very beautiful green, during the few weeks of summer; various small plants, bearing very pretty flowers; *cochlearia*, and different species of sorrels, (precious antidotes against the scurvy;) mosses and lichens, which carpet the rocks; and the *red snow*, (or *protococcus nivalis*,) a microscopic plant, which grows in the midst of the snow, and makes it appear of the color of blood.

The *animals* are, on the contrary, extremely numerous. Besides those which we have already named, in connection with the Arctic Ocean, white bears, morses, seals, narwhals, whales, &c., may be mentioned the reindeer, deer, musk oxen, white hares, lemmings, foxes, and gluttons, which in winter emigrate to the continent of America in search of a milder climate, and return in spring to these islands, before the breaking up of the ice has separated them from one another. Polar navigators have frequently encountered troops of reindeer, deer, musk oxen, or hares, which, unaccustomed to the sight of man, made no attempt at flight; whereas the white bears always instinctively kept at a distance. Geese and wild ducks, plover, sandpipers, and various other aquatic birds, flock in numerous bands to deposit their eggs on the rocks of the northern islands. During a few weeks all is life and animation in the air as well as in the water.

There is no *population*. Esquimaux, from the American continent, frequent even these islands in pursuit of game, but only establish themselves there temporarily. Europeans and Americans, who have been attracted into these cold countries, both by the desire of finding the unfortunate navigator Sir John Franklin, who disappeared nine years ago amid the ice, and by the hope of discovering the famous north-west passage, will now probably abandon these voyages, since Captain McClure, who in the year 1854, ascertained the existence of such a passage, has demonstrated its inutility to ordinary navigation and the necessities of commerce.

GREENLAND. — The beautiful name of *Greenland*, which was given to the large island situated at the north-east of America by the first Icelandic navigators, who discovered it in the 10th

century, seems to have been a name bestowed in derision upon icy countries, almost every where sterile, or at least very ill endowed in respect to vegetation. Greenland terminates at the south in *Cape Farewell*. A chain of steep mountains, covered with ice and eternal snows, somewhat shelters the western coast, where alone Europeans have been able to locate themselves. The eastern coast, (or old Greenland,) where Scandinavian colonies were first established, of whom there no longer exist any traces, is now abandoned and almost deserted. Its northern boundary is comparatively unknown. "Dr. Kane, in his recent expedition to the arctic regions, passed through Smith's Sound, and explored the northern coast of Greenland, as far as 67° west longitude. He reports the existence of an open sea north of the parallel of 82° . To reach it, his party crossed a barrier of ice 80 or 100 miles broad. Before gaining this open water, he found the thermometer to show the extreme temperature of -60° . Passing this ice-bound region by travelling north, he stood on the shores of an iceless sea, extending in an unbroken sheet of water as far as the eye could reach towards the pole. Its waves were dashing on the beach with the swell of a boundless ocean. Seals were sporting and water fowl feeding in this open sea. The temperature of its waters was only 36° ." *

The *climate*, every where very cold, varies a little, however, according to the latitude, for in the southern part the longest night does not exceed $18\frac{1}{2}$ hours. The winter lasts from eight to ten months; the summer is very short, but the heat sometimes rises as high as 24 degrees; the inhabitants are then tormented by mosquitos, and the sky is obscured by fogs.

Minerals. — The mountains contain rich copper bearings, from which it is very difficult to derive any benefit. A vast mine of coal has been discovered in the Island of Disco, at the north-west.

The *vegetation* is necessarily very poor. Small trees, or stunted shrubs, are, however, met with, such as willows, alders, puny birches, myrtles, (whose sour berries are eaten by the natives,) sorrel, cochlearia, and excellent grass in the most favored portions. In the southern districts, the Europeans cultivate cab-

* Maury's "Physical Geography of the Sea."

bage, radishes, celery, carrots, potatoes, a little barley, and oats ; but all these cultivations require much care, and often do not succeed at all, especially the two latter.

The most common *animals* are wild reindeer, white bears, red and black foxes, great white hares, whose flesh is excellent, and large dogs, which are employed for drawing sledges. The coasts are visited by immense quantities of aquatic birds, among which should be specified the eider duck. The seas abound in fish, and especially in seals, which are always the principal resource of the natives. The flesh serves to nourish them ; the skin furnishes them with clothing, and with coverings for their summer tents, and is also used in the construction of their boats ; the sinews are con-



Greenlander.

verted into thread by the women ; the bladders serve for bottles ; and the fat takes the place of butter, or is used for lighting their habitations ; so that for a long time the Greenlanders could not comprehend how people could exist without sea calves.

Population. — These natives are Esquimaux of small stature, swarthy complexion, and a mild, peaceable, and honest character. In winter they inhabit filthy mud huts, lighted by a large lamp, and slightly warmed. In summer they dwell under tents, made of the skins of seals. They often experience long and severe famines ; for unfortunately the Esquimaux is destitute of foresight, and never dreams of making provision for the future in times of plenty. Owing to the admirable self-devotion of the Moravian

missionaries, who for more than a century have subjected themselves to a life of privation and suffering among the natives, in order to impart to them the knowledge of the gospel, and introduce among them the benefits of civilization, the majority of the Greenlanders have now become Christians. They form regularly organized churches, provided with seminaries and schools, in the midst of which reigns an evangelical spirit, which produces a remarkable missionary activity. Those Greenlanders who are still pagans entertain a vague belief in the immortality of the soul, and in a Supreme Being; but their natural passions and their superstition are unworthily wrought upon by their priests, who are at the same time sorcerers and physicians. The pagans chiefly inhabit the remote countries of the interior, and of the eastern coast, where the authority of Denmark has never extended.

NEWFOUNDLAND AND THE NEIGHBORING ISLANDS. — The great Island of Newfoundland is situated at the entrance of the Gulf of St. Lawrence; the *Strait of Bellisle* separates it from Labrador. The interior is filled with mountains, forests, and marshy valleys, and its excessively indented coasts offer an excellent shelter to the numerous ships which come thither to prepare the cod, caught in abundance in the neighboring seas.

The *climate* is healthy, but not very agreeable; it is less cold than in Canada, but thick fogs are very frequent, and greatly impede navigation.

The *minerals* are iron, copper, and a considerable quantity of coal.

The *vegetables* are firs, birches, and berry-bearing shrubs; potatoes, a little grain, and some legumes are cultivated, but the severe winters and continual fogs are great obstacles to the development of agriculture.

The *animals* are stags, elks, bears, foxes, hares, otters, and many aquatic birds, which build their nests among the rocks of the shore. The inhabitants raise horses, horned cattle, sheep, and especially those famous *Newfoundland dogs*, whose strength, docility, attachment to their master, passion for the water, and above all, the facility in swimming which is afforded them by the membrane placed between the claws of their feet, render them extremely useful in cases of shipwreck, or disasters at sea.

The *population* now consists only of English colonists, fishermen, or permanent residents ; within a certain number of years, the last remnants of the wild Indians of the interior of the island have completely disappeared.

West of Newfoundland, the three small islands of *St. Pierre*, *Miquelon*, and *Little Miquelon*, which belong to France, serve as places of resort for the preparation of the cod. Still farther west,



Newfoundland Dog.

and at the mouth of the River St. Lawrence, is found the great English Island of *Anticosti*, abounding in forests and game ; south of Newfoundland, and near the coasts of Nova Scotia, lie the two large English Islands of *St. John* or *Prince Edward*, of a mild climate, and of a fertile and smiling aspect, and farther east the *Island of Cape Breton*, important on account of its fisheries and its inexhaustible mines of coal.

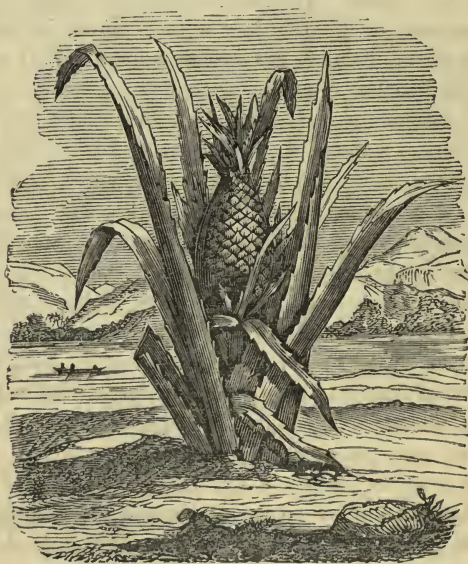
THE BERMUDAS. — This archipelago, situated at about 200 leagues east of the coast of the United States, is composed of nearly 400 islands, or islets, only eight of which are inhabited. They contain little vegetable earth, and only cistern water. Maize, tobacco, a little cotton, and some vegetables are cultivated. But the principal wealth of these islands consists in a species of cedar, which attains a height of from 40 to 50 feet, and whose wood, at once light and solid, is equally adapted to the construction of vessels and the manufacture of pencils. The fortunes of individuals are estimated by the number of cedars which they possess. These islands, of inconsiderable importance, are peopled by English colonists and some thousands of negroes.

LUCAYOS, OR BAHAMA ISLANDS. — These islands, generally of narrow and elongated form, are situated south-east of Florida, from which they are separated by the *New Bahama Channel* and *Florida Pass*; they are islands of some celebrity, because this was the first portion of America which Christopher Columbus discovered, touching on the 12th of October, 1492, at one of them called *Guanahani*, now *San Salvador*. Of the group of about 500, 12 only are inhabited, and almost all are surrounded by reefs. They are generally flat, of little fertility, possessing few springs, and exposed to suffocating heat and violent winds. The cultivation of cotton, the exploration of salt marshes, and the tortoise fishery, constitute the principal occupation of more than 20,000 English colonists established in this archipelago.

THE GREATER ANTILLES. — The *Island of Cuba*, the most western, the largest, and at the same time the most beautiful of the Antilles, has somewhat the form of a bow. It is traversed from east to west by a chain of mountains of considerable height, covered with magnificent forests. Many rocks, islets, or sand banks render the approach to this country dangerous. The climate, although very hot, is, however, more agreeable than in the rest of the Antilles; the yellow fever often causes terrible ravages during the rainy season, (June, July, and August.) The precious minerals which the mountains contain are no longer explored; but the soil is of remarkable fertility, and commonly yields two crops a year. The roads are bordered with palm and cocoa nut trees; the hedges are composed of torch thistles and

other species of cactus, which present the form of candelabras. Among the alimentary plants which abound in this island are the *ignames* and the *pineapple*. The former produces tubercles somewhat similar to those of the potato ; after being cooked, they afford a very wholesome and agreeable nutriment, which constitutes the principal food of the inhabitants of many of the countries of Southern Asia. The tubercles of the most widely diffused but not the best species acquire two or three feet in length, and often weigh from 30 to 40 pounds ; their form is generally oblong, and their flesh sometimes whitish, and sometimes of a reddish hue.

The pineapple (*anana*,) is a plant with long, stiff, and pointed leaves, folded in groves, and with sharp, denticulated edges ; from



• *Pineapple.*

the centre of these leaves rises a rounded stalk, about two feet in height, and as large as the thumb, which produces, first a cluster of bluish flowers, soon succeeded by a solitary fruit, very similar

in form to a fir cone, but which attains nearly the size of the two fists. This fruit, of a golden yellow, combines the flavor and the perfume of many of the most exquisite fruits — strawberries, raspberries, melons, apricots, &c. It has been pronounced the *king of fruits*, but it only merits this reputation in the countries where it can grow in the open air ; this degree of excellence has not been attained by those which have been cultivated in European hothouses, within a hundred years, since the period when Louis XV. and his court regaled themselves upon the first two ananas which were brought to maturity in France. The top of this fruit is garnished with a tuft of thorny leaves, which, being planted in the earth, sprout and produce a new plant.

One of the principal articles of cultivation is that of *tobacco*, of which the famous *Havana cigars* are prepared, which are reputed the best in the world. The manufacture of sugar equals the enormous amount of 300,000 tons a year, almost as much as is produced by all the English possessions united. Next rank other less important articles — coffee, cacao, manioc, maize, indigo, &c. This colony, become exceedingly prosperous within twenty years, has proved a very important acquisition to Spain. Slavery has been maintained there, and the negroes are more numerous than the whites. Catholicism is the religion of the whole country.

The *Island of Hayti*, anciently *St. Domingo*, sometimes sur-named *Queen of the Antilles*, is a beautiful country, threaded by many wooded chains, and intersected by valleys and smiling plains, which are watered by numerous rivers. The climate is very salubrious on the heights, but an oppressive heat, combined with the natural humidity of the country, gives rise in the plains to dangerous maladies, especially fatal to Europeans. The mountains contain some precious metals, but the principal wealth of the country consists in the extraordinary fertility of the soil. When St. Domingo was a colony of France, this island produced an enormous quantity of coffee and sugar. But since the negroes (long enslaved) emancipated themselves (1791) from the yoke of their masters by massacres, and constituted themselves an independent state, in which men of color alone have the privilege of establishing themselves and holding possessions, the colonial commodities have almost ceased to be cultivated, and sugar is

now imported into this island, which formerly furnished it to all Europe. The manners and language of this negro empire are, however, those of France; schools and civilization are making some progress; Catholicism is the religion of the state, but all others are tolerated.

The *Island of Porto Rico*, the smallest of the Greater Antilles, is situated east of Hayti. It is traversed from east to west by a chain of mountains covered with forests, whence descend numerous rivers, forming picturesque cascades. Few countries are more beautiful and agreeable; the climate, although hot, is not insalubrious; the soil of the plains is black, rich, and fertile, producing quantities of sugar, coffee, cotton, rice, maize, tobacco, (almost as renowned as that of Cuba,) bananas, manioc, and sweet potatoes. The fields nourish multitudes of cattle, whose flesh is of an exquisite flavor; the mules of Porto Rico are also held in high estimation. This island is infested by no dangerous animals — neither ferocious beasts, venomous reptiles, nor noxious insects. The only formidable scourges are the hurricanes. The Island of Porto Rico belongs to Spain, and has, like Cuba, continued to maintain slavery, but is far less rich and prosperous.

Jamaica, south of Cuba, is the principal of the English possessions among the Antilles. The *Blue Mountains*, which traverse it throughout its whole length, are quite elevated, and covered with forests, in which flourish lemon trees, iron wood, mahogany, and campeachy wood, and palm trees of various species. The climate is temperate only in the mountains; elsewhere it is very hot, and not very healthy for foreigners. The soil, which is carefully cultivated, yields much sugar, (of which the celebrated *Jamaica rum* is manufactured,) coffee, cacao, indigo, and cotton. Ginger grows wild on most of the hills of little elevation. The *Jamaica pepper*, or *English pimento*, is a tree which bears a fruit in the form of small globular berries; this fruit, after being dried a few days in the sun, is exported. Its pungent and aromatic flavor, partaking at once of the nature of cinnamon, cloves, and nutmeg, (whence the surname of *allspice*,) renders it an excellent seasoning in various branches of cookery. Pineapples, bananas, melons, oranges, and other fruits abound throughout the island. This colony has not yet entirely recovered from the blow given

to cultivation and commerce by the emancipation of the negroes; for the latter, become free, are no longer willing to labor, even for high wages, as they were formerly accustomed to do when slaves; but the colonists are seeking to remedy this evil by introducing into the English Antilles free laborers, procured from Africa or the Indies, and who supersede the negroes in the plantations. Evangelical missions, by previously converting and instructing the slaves, had prepared them to receive the tidings of their emancipation with gratitude, instead of regarding it, like those of St. Domingo, as a good opportunity for avenging themselves upon their former masters. The Protestant religion is that of the majority of the island; a certain number of negroes are still pagans; but the greater part belong to zealous churches, which now despatch negro missionaries — pastors or laymen — to propagate the Christian religion among their brethren of the African continent.

THE LESSER ANTILLES. — These islands are generally mountainous, sprinkled with volcanoes, for the most part extinct, and known under the names of *sulphur mines*, *mornes*, and *peaks*. Earthquakes are frequent, and hurricanes, whose violence exceeds all imagination, only too often lay waste these beautiful countries. The climate is very hot; but as the atmosphere is at the same time completely impregnated with moisture, the inhabitants live in a continual vapor bath, very injurious to the health of foreigners. It is during the rainy or winter season, from April to October, that the most fatal maladies (and even from time to time the yellow fever) are developed. The vegetation is superb in most of these islands; but it does not differ materially from that of the neighboring countries, such as Florida or Guiana. Nowhere, however, are encountered so many *manchineel trees*, whose fruits, of an inviting appearance, cause the speedy and painful death of the imprudent individual who partakes of them; if a drop of the corrosive milk of this tree becomes introduced into the eyes, it occasions intolerable suffering for a day at least. It is said that the negroes frequently lop off the branches and cast them into the water, in order, by poisoning the fish, to render them a more easy prey. Another tree, originally from these countries, is the *papaw tree*, whose fruit, in the form of a melon, is especially

palatable after being baked in the oven ; its juice has also the effect of immediately imparting tenderness to the viands with which it is mixed. Yams, batatas, and all kinds of fruit, supply the place of bread among the inhabitants of these islands, whose principal revenues are derived from the cultivation of the colonial commodities, sugar, coffee, indigo, cotton, arnotto, and tobacco.



Papaw Tree.

The indigenous population, for some centuries extinct, has been replaced by negroes, who have recently been emancipated in the greater part of these islands. The blacks having refused to work on the plantations, free laborers have been introduced from

Maderia or India, and the production in consequence is rapidly augmenting. The greater part of these islands belong to England — *Antigua, St. Christopher, Dominica, St. Lucia, St. Vincent, Grenada, Barbadoes, Tobago, and Trinidad*; others belong to France — *Martinique, Guadaloupe, &c.* The Danes possess the three small islands of *Santa Cruz, St. Thomas, and St. John*; the Dutch, *St. Eustatius and Curaçoa*; the Swedes, the islet of *St. Bartholomew*. They are often subdivided into three groups — the *Virgin Islands* at the north, *Windward Islands* in the centre, and *Leeward Islands*, that is to say, islands sheltered from the trade winds by their situation along the northern coast of South America.

FALKLAND ISLANDS. — This archipelago, which consists of two large islands and a few small ones, is remarkable for the total absence of all kinds of trees, for its turfy soil, and the abundance of its pastures, which feed immense herds of oxen, horses, and other domestic animals which have there become wild. From their good harbors and favorable situation, these islands seem naturally designed to serve as havens for ships which double Cape Horn. Thus, although originally uninhabited, the English have not neglected to found a settlement there. This archipelago also derives importance from the fishery of seals and whales, which are still abundant. Numerous troops of sea birds likewise frequent these shores, among others *penguins*, or *manchots*, large birds nearly three feet in height, and somewhat resembling geese; their wings are so short that it is impossible for them to fly; thus they easily become the prey of the sportsman, who usually kills them with a club. The only indigenous quadruped found in these islands is a species of wild dog, which partakes of the nature both of the wolf and the fox.

ISLANDS OF TIERRA DEL FUEGO, AND STATEN ISLAND. — *Tierra del Fuego*, so called on account of its active volcanoes, is a body of mountainous, cold, and sterile islands. They are separated from Patagonia by the long and intricate Strait of Magellan, whose navigation is rendered so difficult by the winds and currents, that most shipmasters prefer to double Cape Horn, notwithstanding the icy winds which rage with extreme violence in those latitudes. The western coasts, bordered by huge cliffs,

beaten almost continually by hurricanes, present a wild and terrible aspect. Those of the east and north, of a more prepossessing



Penguins.

nature, contain woods and pastures, and produce hares, foxes, and even horses. The southern coasts are arid, but abound in otters, seals, and sea birds; they also furnish navigators with antiscorbutic plants — cresses and celery. *Staten Island*, separated from those of *Tierra del Fuego* by the *Strait of Le Maire*, differs from them only in its snowy and still more rugged mountains. The inhabitants, of revolting uncleanness, are like those of *Tierra del Fuego* — *Patagonians*, of ordinary size, very ignorant, and almost wild.

CHILOE ISLANDS. — This archipelago, situated south-west of *Chili*, is composed of about 80 islands, only 25 of which are inhabited. The largest is *Chiloe*. They are mountainous, and possess a salubrious, but cold and rainy climate. They contain some mines of coal, and important deposits of *guano*, that valuable

excrement of birds, of which we have spoken in connection with Peru. Wheat and flax thrive there; the forests are tenanted by many wild boars. The population is composed of Indians and Spaniards, all Catholics.

ISLANDS OF JUAN FERNANDEZ. — These islands, (*Mas a tierra*, nearer land, and *Mas a fuero*, further out,) situated 200 leagues from the coast of Chili, are mountainous but well watered, fertile, tolerably well wooded, of an agreeable climate, and nevertheless uninhabited. They are only celebrated through the adventure of the Scotch sailor Alexander Selkirk, who was there abandoned by his captain — an adventure which inspired Daniel Defoe with his ingenious romance of *Robinson Crusoe*.

GALLAPAGOS ISLANDS. — This group of small, sterile, deserted, and uninhabited islands, situated more than 200 leagues west of the coast of Peru, derive their name from the innumerable tortoises which abound there. They produce also the amblyrhynchus, a lizard of about three feet in length, remarkable as being the only animal of this genus which lives in the sea, and which has consequently some analogy to the great fossil lizards known under the names of *plesiosaurus* and *ichthyosaurus*.

ALEUTIAN ISLANDS. — These islands, which are very numerous, seem to be the continuation of the peninsula of Aliaska. They are mountainous, and of a damp rather than cold climate. Barley, potatoes, and legumes succeed perfectly there; but the hunt of *seals* and *sea otters* constitutes the principal resource of the inhabitants. In the month of May, the seals arrive with extraordinary punctuality at the *Island of St. Paul*, each male followed by a troop of from 10 to 200 females. A few days after their arrival, the latter give birth to their young, and devote the remainder of the summer to the rearing of them. In the month of October, the seals disappear, departing to unknown quarters. At the proper season, they are driven, like a flock of sheep, into an establishment situated at a certain distance from the sea. There, most of the males over four years of age are set aside and killed, a certain number of the largest being preserved, with all the females. Since they are no longer slain indiscriminately, the species have greatly augmented; thus, instead

of 4000 skins, which were formerly exported from St. Paul, 23,000 were obtained thence in 1851. The indigenous population of the Aleutian Isles are gradually disappearing, in consequence of the oppression and misery which they experience at the hands of the Russian colonists. They are replaced by peasants, introduced at great expense from Finland or Siberia; so true it is that from north to south, both in the islands and on the main land, America seems destined to become a New Europe, where the surplus populations of the old world become diffused and found flourishing and growing colonies, which will shortly outstrip in wealth and prosperity, if not in civilization, the communities from which they sprang. Life, youth, and the spirit of enterprise seem to gain daily-increasing strength in this new world, and the most brilliant destinies undoubtedly await it in futurity.

CHAPTER X.

OCEANICA.

SECTION 1. DIVISIONS. — The fifth division of the globe comprises the innumerable islands, of various dimensions, with which the Pacific Ocean is studded, and is usually considered under three divisions — *Central Oceanica*, or *Australia*; *Western Oceanica*, or the Malay Archipelago; and *Eastern Oceanica*, or *Polynesia*.

SECT. 2. CENTRAL OCEANICA. — *Australia*, whose extent is nearly equivalent to three quarters of Europe, is a continent still more imperfect than Africa. Its coasts are, indeed, indented by a considerable number of bays and harbors, which are capable of sheltering entire fleets; but it is every where destitute (except perhaps at the north-east) of the advantages which, as we are aware, result to a continent from the existence of a great number of peninsulas and deep gulfs. Another circumstance detrimental to this continent is, that instead of possessing towards its centre a high country, whence issue great rivers, by means of which one can penetrate with more or less facility from the borders of the sea into the interior, it seems to contain only vast, low, and arid plains, where most of the rivers which descend from the mountains disappear.

Moreover nature and animated life in this country every where present strange anomalies. In consequence of its position in the opposite hemisphere, the seasons in *Australia* are directly the reverse of our own, and Christmas is usually the hottest day in the year; the north wind, which congeals our soil, parches and deeply fissures the *Australian* fields, where the husbandmen rise when we go to rest.

The *vegetables* are no less extraordinary. There are found magnificent flowers, rich in honey, but without perfume; nettles

and ferns of the height of our oaks, whilst the poplars are only small shrubs; vast forests springing from the bare sand, but which afford neither shade nor freshness; trees whose wood resists the action of fire, others which annually shed their bark, while their leaves always remain on the branches; certain fruits which resemble our pears, but which are suspended from the tree by the largest part of the fruit; others which have been compared to cherries with the flesh inside and the stone outside, &c.

The *animals* are more singular still, in the eyes of a foreigner. The great majority of the quadrupeds of Australia are *marsupials*, or animals with pouches like the opossum; others have a bill like birds; there are likewise dogs which never bark. Most of the birds possess magnificent plumage, but are not gifted with song; many species, instead of a tongue, have a kind of brush, which enables them to lap from the flowers the honey on which they subsist. Swans and cockatoos, every where else white, are here black: the eagle and the redbreast, on the contrary, are white.

As respects the human race, the contrast is no less marked between the miserable black native, whose leanness and lack of intelligence consign him to the lowest round of the human ladder, and that throng of active and enterprising English colonists, who emigrate in constantly increasing numbers, to establish themselves on all these shores, cultivate the soil, and work the mines, ever driving the ancient proprietors of the country farther and farther towards the unknown solitudes of the interior.

This continent, discovered about 200 years ago by Dutch navigators, who gave it the name of *New Holland*, by which it is still frequently designated, seems then, in every point of view, to promise a new, curious, and interesting study, and one which is well worthy of our attention.

SEAS WHICH ENCOMPASS AUSTRALIA. — This continent is washed by two seas, with which we are already acquainted — the *Pacific Ocean* at the east, and the *Indian Ocean* at the north, west, and south-west. They communicate with each other by two celebrated and much frequented, although very dangerous straits — the Strait of Bass, which, at the south, separates Cape Wilson from the Island of Van Diemen, and the Strait

of Torres, which, at the north, separates Cape York from New Guinea.

Bass Strait is obstructed by a great number of islands, now partly inhabited by the strange population of *straitsmen*, former *convicts*, or criminals, condemned by the law, who, discharged or having escaped thither, subsist by fishing, seal hunting, and the capture of birds' eggs; they marry Australian women, but still rear their robust descendants with a certain degree of care. The principal commerce of the *straitsmen* consists in the sale of the feathers of *black petrels*, which annually visit these islands, towards the 15th or 20th of November, to hatch their eggs. Each female lays two eggs, of about the size of those of a goose, and almost as good an article of food. The male sits during the day, and the female during the night, and each in turn goes to seek its food in the open sea. As soon as the wings of the little ones are developed, they all quit the islands. Their nests are sunk two or three feet in the earth, and so well concealed that it is almost impossible to perceive them in time to avoid falling into them. When the fishermen or their wives wish to capture a great number of petrels, (not being content with their eggs,) they construct a palisade at a little distance from the shore, and at daybreak, at the time when the birds are preparing to regain the sea, they pursue them, making a great noise, and driving them in the direction of the palisade. The latter, which in flying cannot exceed a certain height, run along the enclosure without being able to surmount it, and finally fall into a great ditch, purposely dug, where they mutually stifle each other. The feathers are packed in sacks and despatched to Launceston, (a town of Van Diemen's Land,) where they bring a good price; the flesh, smoked and dried, constitutes the principal food of the *straitsmen*, although tough and ill flavored.

The *Strait of Torres* is always the safest route that can be pursued by ships sailing from the Southern Pacific into the Indian Ocean; for the trade wind from the south-east blows in this direction during nearly the whole year. And yet the navigation of this strait, and of the neighboring seas, thickly sprinkled with islets and submarine coral reefs, must always be attended with peril. Foggy weather, a mistake in reckoning, a derangement

of the marine watches or chronometers, and other accidents difficult to foresee or prevent, may at any moment cause the destruction of vessels.

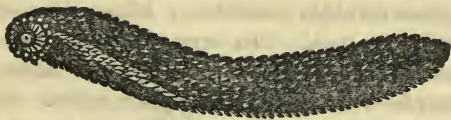
The *Coral Sea*, south-east of the Strait of Torres, is particularly celebrated for its dangers and shipwrecks. For a space of more than 300 leagues along the eastern coast of Australia, and across the strait itself, extends a *great barrier of reefs*, the most vast formation of coral that exists in the world. Rising abruptly from the depths of the ocean, this bank, of only a few hundred feet in breadth, suddenly arrests the course of the waves; the latter shoot upwards in dark blue mountains, and descend again in an uninterrupted cataract of dazzling foam. The fearful agitation, and the incessant roaring of the billows, which sometimes resembles the rolling of thunder, combine to form a spectacle replete with grandeur and majesty. Inevitable destruction awaits the unfortunate ship which is driven by the storm upon these formidable shoals. In ordinary weather, no danger is to be apprehended, on account of the wonderful transparency of the waters of the ocean in this vicinity. This transparency is such that from the top of a mast a reef buried beneath five fathoms of water may be distinguished at the distance of more than a quarter of an hour's sail, so much does its color differ from that of the sea which covers it.

Only a small number of open passages present themselves throughout this long barrier, separated from the coasts of Australia by a space of from 7 to 20 or 25 leagues. The English government has constructed lighthouses upon the islands, situated at the entrance (or outlet) of those among these passages which offer the most security. Very curious are some of these madreporic islands—veritable paradises of birds, whose soil has never been occupied by man. The surface is literally covered with frigates, gannets, boobies, tern, and other sea birds. At night-fall they may be seen flocking on swift wings from different points of the horizon; and if by day one crosses the island with a rapid step, thousands arise from all sides, uttering cries of indignation and terror, which resemble the noise of mighty waters. The existence of these myriads of creatures, completely useless to man, and yet so liberally provided from the commencement of the

world with every thing that is essential to their welfare, is certainly one of the wonders of creation. How confidently, then, may man rely upon the care of that divine Providence which manifests such constant and devoted solicitude for the birds of the South Sea! The Gulf of Carpentaria, south-west of the peninsula of the same name, and of the Cape of York, is a vast gulf of the Indian Sea, which seems destined to become entirely absorbed in the course of time. Its bottom is flat, miry, and shallow. To a great distance from the shore stretches a large bank of mud, which is covered by only a few feet of water, and which almost every where prevents vessels from approaching the land; but at the mouths of rivers, a canal has been worn by the current across this bank. The coast in the vicinity of the gulf presents only an immense plain, almost completely arid, and which seems to have recently issued from the sea. In proportion as the waters recede, the border of mangroves, which encircles the coast, advances, leaving behind it a plain of greater and greater extent, and clothed with a meagre vegetation.

A curious phenomenon of this gulf, and of the neighboring sea, is a current of water as white as milk, which regularly in the month of June, or in the months of August and September, becomes diffused even in the environs of the Moluccas, situated at a great distance towards the north. These waters are luminous and phosphorescent during the night; the whitish color, which characterizes them by day, is attributed to the presence of infinite myriads of eggs of certain marine animals.

In this gulf also, and in these seas, is prosecuted the fishery for the *trepang*, a species of holothuria, or mollusk, without a shell,



Trepang.

having a fleshy body, of one or two feet in length, in which scarcely any organ is distinguishable. As it usually remains attached to the bottom of the sea, upon banks of mud or coral reefs, the

talent of the fisherman consists in understanding the art of diving, and having an eye practised in discerning it at the bottom of the water. In order to preserve it, it is cast alive into a kettle of boiling sea water, where it is kept constantly in motion for ten minutes. At the expiration of this time, the trepang is taken from the kettle, having ejected in abundance the water which it contains in the interior of its body. A man provided with a large knife then opens it, and extracts its intestines, after which it is thrown into a second kettle, where it is boiled with the bark of the mimosa, with which it must be smoked in order to insure its preservation. It then only requires to be washed in several waters to remove as much as possible the disagreeable taste of coral, which it always, to some degree, preserves, after which it is dried on hurdles in the sun, and sent to China, where it is highly appreciated. Its price varies according to the quality; the most choice is sold for about 500 or 600 francs a bushel. Of it the Chinese make soups and ragouts, and in order to disguise the sea flavor, boil it with sugar cane.

The *mountains of Australia* are still very imperfectly known. The principal of them form a long chain, which extends from Cape York to Cape Wilson, along the eastern coast, from which they only recede for a distance of from 20 to 50 leagues. This chain sometimes forms many parallel ridges, and sometimes expands in groups which project secondary chains at the east and west.

BLUE MOUNTAINS AND AUSTRALIAN ALPS. — The name of Blue Mountains has been given to the most considerable portion of this chain, which extends from the environs of the city of Sydney, as far as Cape Wilson. The most southern portion, however, is that which possesses the highest summits, and is known under the name of *Australian Alps*; *Mount Kosciusko*, which is the principal peak, attains, it is true, only 6800 feet, but its situation is so favorable that from its abrupt and snowy summit the view commands a space of 7000 square miles. Although but little elevated, these Australian Alps contain eternal snows.

Notwithstanding that the existence of volcanic mountains and great streams of lava has been ascertained in this chain, it does not appear that any volcano in activity is found in these or any other mountains of the Australian continent. In 1818 there was

discovered in the vicinity of the Hunter River, on its eastern bank, a hill on fire, called by the savages *wigen*, (*ouigen*, which in their language signifies *fire*.) The conflagration extends over an inconsiderable space. The light and bluish flame issues through holes and crevices, the greatest width of which is three feet. Red flames are visible at a depth of about 20 feet; but as very large trees flourish near these openings, and the latter seem to experience no detriment from the proximity of the fire, it has been concluded that it was not a volcano, but a coal pit, or mine of some other combustible substance, which had become ignited, and continued to burn quietly, as is the case in certain countries in Europe.

All these mountains partake of the eccentric character which pervades the whole continent. They scarcely any where present rounded summits, sharp peaks, or regular slopes. Their crests are long, flat surfaces, which terminate abruptly in deep and tortuous precipices. Here is a hill in the form of a chest; there a house with chimneys, or a gigantic hat or bonnet of conical shape; every where, in a word, a medley of all kinds of forms, which seem to have been mingled and thrown together in a most promiscuous manner. The different ramifications are, moreover, separated by obscure and almost subterranean valleys, bordered with impassable precipices, through which rivers flow silently, or in foaming torrents, the whole forming a barrier so arduous and steep that it was long believed inaccessible. By daring exploits, a road has been opened, which, along excessively deep abysses, presents fearfully picturesque views.

These mountains are tolerably well wooded, and give rise to a great number of rivers, some of which flow easterly, and after a limited course empty into the Pacific Ocean; others, pursuing a westerly course, disappear for the most part in the deserts of the interior. But the circumstance which has recently attached great importance to these mountains, and attracted towards them the attention of the whole world, is the existence of gold mines, much richer, even, than those of California, which were suddenly discovered in the spring of 1851, in the dried beds of several of the rivers of the western declivity. A land owner of this country, on returning from an expedition made to California in search of

gold, fancying he perceived an astonishing resemblance between the soils of the two countries, commenced digging operations, which were attended with the most marvellous success. His discovery was immediately made public, a rich recompense was awarded him by the English government, and people flocked to the mines from all quarters.

Stories have been related on the subject of these diggings worthy of the tales of the *Thousand and One Nights*. Thus it is narrated, that a native in the service of a colonist, observing his master carefully lay aside a few pieces of gold, promised to procure him a great lump of the same material, in exchange for some trifling articles of dress, and that he brought him, in fact, a block containing gold to the amount of \$20,000. Another black native, who had been instructed by the missionaries, also acquainted his master, Dr. Kear, with the existence of an enormous block of auriferous quartz, of about three quintals weight. The doctor, knowing no other means of removing this mass, decided to break it, and obtained from it a quantity of ingots valued at \$32,000, the largest of which, resembling a honeycomb or sponge, and weighing, of itself alone, little less than 75 pounds, yielded about 60 pounds of pure gold.

The richest deposits are found in the veins of a blue clay, where the perfectly pure ore appears to have been conveyed by the water, in fragments weighing from a quarter of an ounce to 2 or 3 ounces. Sometimes it is encased in round pebbles of quartz, detached, also, from the neighboring mountains, and swept away by the waters. In this case, the fragments which are obtained weigh as much as 7 or 8 ounces. In the famous mines of *Ophir*, in Bathurst county, 228 ounces of gold have been found in two lumps, corroded by the waters. Three men in three days have been known to collect there 10 pounds of gold.

AUSTRALIAN PYRENEES. — West of the Australian Alps, which direct their course from north-east to south-west, are the Pyrenees, which extend first from east to west, then from north to south. It is an important chain, whose summit, always crowned with snow, and of a dazzling whiteness, is visible to a great distance at sea, and whose waters nourish the most considerable

rivers of Australia. This chain has presented gold bearings still richer than the preceding. In the district of *Mount Alexander*, among others, enormous quantities of gold have been discovered on the surface of the soil. There are instances of 50 pounds being amassed in a few hours' labor. In six days three men have accumulated 192 pounds weight. Elsewhere, four colonists, come thither as amateurs, collected 150 pounds between the hours of breakfast and dinner. These first bearings have become exhausted, and the diggings must now be executed at a great depth, even to the clayey subsoil, pursuing the direction of the torrents and rivers which descend from the Pyrenees to the River Murray.

MOUNTAINS OF SOUTHERN AUSTRALIA. — West of the preceding chain, between the mouth of the Murray River and the Gulf of Spencer, rise the *mountains of Southern Australia*, which proceed from south to north, and have become celebrated through their rich copper mines. The most important — that of Burra-Burra — was discovered by accident, 95 miles from the city of Adelaide, capital of the province. It is the most extensive, the richest, and the most productive in the whole world. The discovery of the gold mines has, for a time, caused its exploration to be somewhat neglected; but it is, nevertheless, still considerable, and the ore is of such superior quality that it yields 98 per cent. Thus the proceeds of this enterprise have rapidly risen from \$40 to \$900. Other less productive mines have been successively explored; one among them was found to contain a very abundant vein of gold.

Many mines of argentiferous lead have also been discovered in this country, one of which yields 80 per cent. of lead, while the silver met with bears the proportion of 12 per cent. The production of copper constitutes, however, the principal wealth of this region. In 1852, the produce of the copper mines of Adelaide colony amounted to about \$1,800,000.

DARLING MOUNTAINS. — At about 20 miles from the western coast of Australia, the chain of the *Darling Mountains* runs from north to south, over an extent of more than 400 miles. They are mountains of little importance, whose summits scarcely exceed 1500 feet, with the exception of the *William* and *Keat*

Mountains, which are about 3500 feet high. Farther east, the *Sterling Mountains* extend as far as the southern coast. The Darling Mountains are also rich in mineral substances, although they have not yet revealed gold mines. *Alum* is found there in great profusion; *salt* in abundance; *ferruginous sand*, from which quantities of pure iron are extracted; mines of *argentiferous lead*; and what is of more value still, considerable beds of *coal*, not far from Champion Bay.

RIVERS AND LAKES OF AUSTRALIA. — In reviewing the rivers or lakes of Australia, we must necessarily modify our usual ideas, as, likewise, in the consideration of its forests; in their usual state, the rivers and lakes of the Australian continent contain no water. The locality of a lake is recognized by the depression of the soil, as well as by the nature of the vegetation, and sometimes by the softness of the soil, which is covered by a thick bed of slime. A river is merely a kind of large ditch, filled with water at intervals, after heavy rains, but in which, usually, only a few pools of water are here and there encountered. One may often cross the bed of a river without in the least suspecting it. But after an abundant rain has fallen in the mountains, furious torrents may be seen descending for several days, or for a few hours only, which often commence in a stream of stones and mud of a very strange aspect, and whose sudden and noisy approach strikes one with terror.

At other times, the traveller, after crossing a dry and dusty country, producing only a few tufts of yellow grass, rushes panting towards a beautiful sheet of water; but alas! it is salt, more so even than the waves of the sea. He need not, however, be discouraged; for if he descend or ascend the bed of the river for a short time, he is almost sure to discover another basin of water, which will this time prove deliciously pure.

These peculiarities must not be exaggerated. It has long been supposed that Australia contained no rivers, properly so called, and that all its streams become absorbed in the marshes or sands of the interior. But new discoveries have brought to light the existence of remarkable rivers, among others the Darling and the Murray, which unite not far from the sea, and at whose mouth is found *Lake Alexandrina*. The waters of the *Darling*, at first

salt, have become fresh when it unites with the Murray. It receives a very great number of affluents from the western declivity of the Blue Mountains — affluents which, it is true, remain dry during nearly the whole year, and in whose beds much gold has been discovered. The principal of these rivers are from north to south — the Banwan, the Gwydir, the River Peel, the Macquarie, the Bogan, &c. The *Murray* descends from the Australian Alps, and owing to their eternal snows, is almost the only permanent watercourse of this country. Last year, (1854,) the steamboat *Lady Augusta*, succeeded in ascending this river to a distance of 1000 miles above its mouth, and it is hoped that this navigation can be carried yet higher, which will insure an active communication between the heart of three of the principal provinces and the sea. The Murray first directs its course from east to west, at the foot of the northern slope of the Pyrenees, as far as the point where it meets the mountains of Southern Australia, which force it towards the sea. Its principal affluents, on the northern side, are the Darling and the Murrumbidgee, the latter of which is swollen by the waters of the Lachlan, and by a great number of small rivers. On the southern side are rivers become celebrated since the discovery of the gold bearings of the Pyrenees — the Mitta-Mitta, the Orens, the Goulburn, and the Loddon. The vast basin of the Murray may then be considered, in a general manner, as the line towards which tend the richest auriferous deposits.

A number of other rivers have as yet been only partially explored, but will soon become better known. They appear to direct their course towards the vast *Lake Torrens*, a kind of inland sea, possessing singular, but at present very imperfect outlines, and which probably communicates with the Southern Sea, by the Spencer Gulf.

The only considerable watercourse of the western coast is the *Swan River*, which rises in the Darling Mountains, and at first bears the name of Avon. In summer the Avon does not flow, but forms great natural reservoirs, sufficient to water numerous droves of cattle. On the eastern coast are found, also, a certain number of small rivers, the principal of which are the Hawkesbury, Patterson, and Brisbane.

PLAINS AND COASTS OF AUSTRALIA. — The different regions of which Australia is composed are still so imperfectly known in respect to their physical configuration, that we can only undertake to give an approximate description, although drawn from very recent sources.

SWAN RIVER COLONY, OR WESTERN AUSTRALIA. — The only well-known portion is that which extends from Swan River to the southern point, or Albany. It has already been divided by the English government into 26 counties, which, on the map, cut each other at right angles, like the squares of a chess board. Many rivers are found there, and various lakes, some of salt and others of fresh water, as likewise rich pastures, and lands very suitable for the cultivation of all kinds of grain. There is generally a dearth of permanent water springs, but the colonists supply the deficiency by constructing great reservoirs for watering the cattle. The soil in this country is composed almost entirely of sand ; but instead of being arid and sterile, like that of Africa, it produces all the most beautiful and exquisite plants that are to be found in the gardens of Europe.

The *climate* is one of the best in the world, and many colonists, arriving in shattered health, speedily recover their strength, and even attain extreme old age. The heat of summer is by no means overpowering, the sea breezes blowing periodically from eleven o'clock until sunset. The nights are refreshed by dews ; it is, however, neither dangerous nor unhealthy to sleep in the open air, especially when one is stationed near a good fire. Snow never falls in winter, but frosts are quite frequent.

Mineral substances are not wanting, and will ere long acquire great importance. Among others have been found *pipe clay* of superior quality, suitable for the manufacture of pottery ware, *salt* in abundance, *alum*, *argentiferous lead*, *mineral coal*, and a few veins of *copper*, as yet but little worked.

The *vegetation* of this colony, as that of Australia generally, presents so peculiar and original a character, that it might easily be imagined the production of another planet. Many entire orders of plants are known only in Australia, and the classes and species which grow elsewhere there assume new and singular forms. All the impressions of freshness and verdure, which in

the memory of a European are associated with the recollection of a forest, are there shocked in a manner as disagreeable as unforeseen. The woods of these regions furnish so little shade that the rays of the sun are more scorching than in the open fields, where nothing at least counteracts the refreshing effect of the breeze. The trees, however, preserve their leaves throughout the year ; but the latter are so narrow that they afford no shade, and owing to their invariable olive-green tint, present the most gloomy aspect ; the direction of these leaves, whose point inclines downwards, gives a very peculiar fringed appearance to the clusters of trees. But if the Australian vegetation does not awaken admiration, it lacks neither variety nor vigor. It includes, for example, more than a hundred species of *eucalyptus*, large trees which grow in sandy soils, and which, together with the leafless acacias, impart to the landscape its prevailing character. One of the most majestic species is the *eucalyptus robusta*, whose trunk is often 140 feet in height, from the surface of the soil to the lowest branches, and 30 in circumference. Its wood, of a deep-red color, and offering little temptation to the devastating tooth of the white ant, is easily cut, and may be employed in all kinds of workmanship. It is known under the name of *Australian mahogany*. The *eucalyptus resinifera* is, of all the trees of this continent, the most useful to the natives, who sustain themselves upon the red gum which it exudes, which also possesses excellent medicinal qualities. Another species of *eucalyptus*, whose white wood, although of iron hardness, is still preyed upon by the white ant, in preference to any other, preserves in the interior of its trunk a supply of rain water, which the natives can procure by boring a hole in the knots of the trunk. With this water they quench their thirst as at a limpid spring, afterwards stopping up the aperture, to avail themselves of more on a future occasion. The bark of its roots is one of the aliments on which they subsist ; they roast and knead it, and after having chewed it, eject it from the mouth. From these roots, also, they obtain worms of a yellow color, and of a finger's length, which they eat with great relish.

The *xanthorrhoea* renders services of the same nature, and many others beside. The natives uproot as many of them as they can, and when the wood of this tree is in a state of putre-

faction, quantities of larvæ, or worms, are formed in it which serve them for food. The xanthorrhæa sometimes rises as many as 14 feet: it flourishes in all kinds of soils, and multiplies in certain localities of Western Australia to such a degree as even to obstruct the passage of man. All animals, and especially those of the bovine race, are fond of the flower. The stalk of this flower is used principally for kindling fires; the trunk, which is very resinous, burns a long time, producing a very lively flame; the leaves compose the beds of the natives, or serve them for torches; they are also used, both by them and by the colonists, instead of tiles for covering their houses. The resinous gum which exudes from the trunk of this tree is employed in manufacturing and perfecting their hammers, other utensils, and even weapons. The tenacity of this gum, when prepared by the savages, surpasses that of any other mastic known in Europe.

The species of the acacia are even more numerous than those of the eucalyptus. Some yield an abundance of amber-colored gum, which is in no respect inferior to the gum arabic; the natives use it as food, and it is an article of commerce between the colonists and England. The tree called *nuytsia florida* produces very beautiful orange-colored flowers, which, when perfectly developed, clothe the tree in such thick clusters that it appears like an immense bouquet, which in the woods creates an effect as beautiful as unexpected. The trunk of this tree also distils tears of a sweet and viscous gum, which is highly relished by the natives.

The flowers of the *banksia narifolia* are six inches in length, and as many in circumference; they produce a liquor similar in taste to honey: sometimes a single flower yields a table spoonful. The natives suck them or steep them in water in order to extract a sweet beverage.

A tree, from whose leaves the colonists obtain an infusion which has some analogy to that which is extracted from tea, has been surnamed the *tea tree*.

The *zamia*, which rises to a height of four or five feet, and grows in sandy soils, bears a fruit of the size of a chestnut, which is a poison in its native state, but which prepared by the savages becomes an exquisite dish. Before making use of these fruits,

they bury them at a certain depth, still contained in the flower. The heat of the soil causes these species of chestnuts to swell, as if to germinate; then eaten raw or cooked in the ashes, they furnish a substantial and savory food.

To complete the enumeration of the useful vegetables which characterized the flora of this region before the arrival of the Europeans, we should mention the *sandal wood*, one of the most precious productions of this continent. The wood of the trunk is of a yellowish color, easily cut, and diffuses a very sweet odor. The Indians and the Chinese, with whom the colonists of Swan River carry on a great commerce of this article, employ it in their most delicate inlaid work, and burn the residue of the dust as incense.

We cannot, then, in contradiction of the foregoing statements, coincide with most geographers in the assertion that Australia has been entirely neglected by nature, in respect to alimentary substances. Here, as elsewhere, God has not failed to manifest his beneficence towards his creatures. The Australian population have never, it is true, enjoyed the grains and fruits which, according to our ideas, seem indispensable to the maintenance of life and prosperity; and they have, therefore, through necessity, become accustomed to subsist upon worms and other reptiles, which we consider revolting to the touch; but should the consumption of worms, lizards, and serpents be deemed so unnatural by people who, like us, disdain neither oysters, snails, frogs, nor eels? There are many other alimentary substances which Providence had seen fit to add to the numerous resources which the natives were able to derive from the animal kingdom before the invasion of the Europeans had, to a considerable extent, diminished the game; thus a plant similar to the batata, but more watery and less nourishing; an onion, of a red color, which they eat raw, roasted by the fire, or mashed and mixed with gum, which latter substance takes the place of bread, and of which they even lay up a store, (an exception to their usual improvident habits;) mushrooms, which, eaten raw, are extremely palatable, and various roots, some fruits, &c.

As respects the grains and vegetables imported from Europe, they have succeeded beyond all expectation: the wine which is

obtained in these sandy soils is of superior quality ; it is even asserted that after the first grapes have been gathered, the stalks bear others, which also arrive at maturity ; the fig tree produces fruit three times successively every year ; the batatas yield two crops, &c. As for the pastures, they appear to be so excellent and so favorable to the multiplication of cattle that a flock of merino sheep, for example, doubles in number every three years.

Animals. — The animals of Australia are likewise remarkable for their originality : they are not numerous in species, and still less so in individuals, in proportion to the vast extent of the country ; not a single animal of any considerable dimensions has been discovered there ; no horses, oxen, or indigenous sheep. Those which have been imported thrive, however, as we have said above, on the grassy steppes of these regions.

The monkey tribe has no representatives ; they could not subsist in a country which is almost entirely deficient in fruits. Among the indigenous species of animals, forty are found nowhere else, and the largest number are *marsupials*, which, however, differ widely from each other in respect to structure and habits, some moving by leaps, supporting themselves on their hind legs and tail ; others living upon trees, and others sustaining themselves in the air, where they leap from bough to bough by spreading, like an umbrella, the membrane located under their body ; there are some which live in burrows, or which are nocturnal, &c.

The *kangaroos* are the largest and most remarkable of the marsupials of Australia. There are a very great number of species, some of which have reddish hair, others blue, on a gray ground ; all afford an excellent flesh, although destitute of fat. The ordinary kangaroo is naturally timid and inoffensive, but extremely vigilant ; it suffers itself to be very easily tamed. It sometimes attains seven feet in height and a weight of 120 pounds. This animal makes little use of its fore paws, which are very short, except in grazing ; whenever it wishes to move quickly, or is pursued, it employs only its hind legs, sustaining itself on its long and strong tail, as upon a spring or lever, and thus surmounts considerable spaces by making enormous bounds. When hard pressed by a dog, it assumes the defensive by seating itself and advancing its hind legs, armed with sharp claws. The female

gives birth to but one at a time; as soon as it becomes large enough, it issues from its pouch and browses on the grass by its mother's side, prompt to again seek refuge in her protecting pock-



Kangaroo.

et whenever danger threatens. If the mother thinks herself about to be overtaken, it is said that she sometimes tears her little one from the pouch and throws it into the grass, doubtless hoping that it will escape. These peaceable animals, which have almost entirely disappeared in the vicinity of the English colonies, still wander in companies of 20, 30, and more, in the interior of the countries of Western Australia. Their skin, when well dressed, is highly valued. The *striped kangaroo*, the most beautiful of its class, is found only on the western coast. The *kangaroo rat* is of the size of a small rabbit; it inhabits the hollows of trees, and seizes its food with its fore paws, like the squirrel.

The *opossum*, or *phalanger*, is also one of the marsupials. It sleeps by day, and at night climbs trees to feed upon the leaves. Its body is of the size of a cat. Its tail, which is quite long, is

of great use in enabling it to suspend itself in difficult passages until it has elsewhere obtained a foothold with its fore paws. It is docile timid, and inoffensive, unless ill used. It is easily tamed,



Opossum.

plays harmlessly, and evinces a partiality for bread, sugar, and especially milk.

The peculiarity of the *flying opossum*, or *petaurus*, is the fact that it flies without possessing wings; that is to say, by distending the skin of its body, it can sustain itself to a certain degree in the air, so as to shoot from one tree to another. These animals are very rare in Western Australia.

The *dingo*, or *New Holland dog*, is the only one among the quadrupeds which allies the animal products of this continent to those of other countries. It is of a reddish brown color, and greatly resembles the fox. It is a strong and ferocious animal, which, when it attacks sheep, seems to delight in killing the greatest possible number, rather from a kind of sanguinary instinct than to satisfy the natural cravings of hunger. A farm is cited, in which, in the earliest times of the colonization, 1200 sheep were destroyed in three months. These dogs hunt in couples, or troops of five or six: they do not bark, but howl in a lugubrious manner. They display much cunning; lie in ambuscade for sheep or kangaroos, spring upon and bite them, flee if they resist, and attack them anew at a little distance, until loss of blood has enfeebled and left them defenceless. If they enter by night into the midst of a flock, they make horrible carnage among them;

they are the inveterate enemies of the European dogs. Although they flee at the sight of man, and never lose their ferocious instincts, the natives tame them, after a fashion, and make use of them in the kangaroo and emeu hunt.

The birds of Australia are, in many respects, as anomalous as the quadrupeds and plants of this continent. Thus, it produces white falcons, black cockatoos, (paroquets,) and swans; the only ones, however, to which we would direct particular attention in connection with Western Australia are the *black swan* and the *emeu*. The former is one of the curiosities of this continent. It exceeds the goose in size, and its bearing is majestic. It is easily tamed, but is by instinct very solitary: the borders of the rivers where it dwells are abandoned by it as soon as they begin to be frequented by European colonists; which, long since, proved to be the case at Swan River, to which this bird had originally given its name.

The *emeu* is the largest bird known, next to the African ostrich, to which family it belongs. It attains the height of a man. Its wings are no larger than those of a hen, which renders it in-



Emeu.

capable of flight. Its feathers are peculiar, and scarcely cover its body; they are five or six inches long, and at the height of two,

the quill forks, forming two exactly equal feathers. The eggs are nearly the size of those of the ostrich, each being equivalent to a hen's egg. The female lays eight or ten of them at a time. The best horse cannot keep pace with the emeu ; the swiftest dogs can only overtake it with great difficulty, and even then they run much risk of being killed with a stroke of its claw. These birds wander in troops of 15 or 20 in the deserted plains of the interior ; they abound especially in Western Australia, where they are eagerly pursued on account of their flesh, which has almost the consistency of beef. The emeu is susceptible of being so thoroughly tamed as to become the constant companion of its master.

The Australian population has been greatly calumniated by naturalists and certain travellers. Attributing to the entire race the abject features, the excessive leanness, and the profound degradation of those among these savages whom the violence or vices of the colonists had exasperated or deplorably corrupted, they have given us a disgusting portrait of the Australians, which would lead us to regard them as beings at once stupid and depraved. Without wishing to call in question the numerous traits of degradation and barbarity which have been alleged against them by certain writers, we prefer to give credence to the testimony of men who, like the travellers M. Eyre and Strzelecki, Major Mitchell, or Bishop Salvado, have resided several years in the midst of the natives, and have observed them in their ordinary life and free from contact with the Europeans.

The Australian, or Endamene, when he has not been disfigured or emaciated by excessive privations, is a man of fine, strong, and muscular figure, with a broad and deep chest, and a dignified carriage. Most of the race are copper-colored rather than deep black ; the women often have cheeks of vermilion color. Their skull has not a much sharper facial angle than that of the whites, but their nose is more or less flat, their lips often thick, their eyes deep-set, black, and expressive. Many travellers have ascribed to them crispy hair, because it is always bristling and besmeared with grease or coloring clay ; it would naturally, however, be long, smooth, black or light colored, and their beard quite thick. They have very beautiful teeth. Even the most robust and well

built are not fat; in certain districts they have no calves to their legs, but their heels are like ours, and their hands and feet small and well moulded. The women are often, also, very well formed, and many of them only differ from the Europeans in color. They would have a very fine head of hair if one of their customs did not oblige them to keep it cut a little above the shoulders.

With regard to their intellectual faculties, there is every probability that if carefully cultivated they would repay whatever efforts were made to instruct them, whether in the arts or sciences. If but little has yet been accomplished in this respect, it is because suitable attempts have not been made.



Native Australian.

The Australians are exceedingly skilful in the imitation of all kinds of arts; many know how to read and write, and prove themselves intelligent workmen. In their independent existence they are active, bold, cunning, and full of sagacity. They have not their equals in acuteness of sight and hearing, in discovering the traces of men or animals, or ascertaining the origin and distance of a sound.

As respects the sentiments, it appears that the Australians, who are not yet contaminated or irritated by contact with the whites, are hospitable, and neither destitute of benevolence nor sensibility. "I have seen parents," says M. Eyre, "tenderly embracing and

shedding tears over the children whom they beheld after a long separation." "I was a witness," says Captain Stokes, "in the family of a native, of a still more touching scene. The wife of this native had had the misfortune to lose her child. Inconsolable for his death, she had carefully preserved his little bones, and carried them every where with her. When her grief became overpowering, she would unite all these bones in such a manner as to form a skeleton, after which she would bathe it in her tears. Doubtless then her imagination invested these inanimate remains with the image of life ; she beheld the eyes of her child regarding her, his mouth smiling upon her, his tiny arms outstretched, and her anguish was thus beguiled during a few short hours."

The Australians are likewise excellent fathers, and yet, through pride and roughness of manners, they manifest no affection for the mothers of their children. The women would never presume to eat with their husbands ; to the former are assigned the severest labors, and they are often abused. Each man may have many wives, although he generally has but one. It may thence very naturally be inferred that the birth of boys only is an occasion of joy to the family. It is indeed the fate of the third daughter to perish by the hand of her mother, unless adopted by some other woman. The children are much attached to their aged parents. Their wars are attended with little bloodshed ; if the murder of a member of the family requires expiation by blood, it does not necessarily involve death. They entertain such a respect for the bones of their own people, that one colonist is cited who completely screened his house from their attacks, by burying before his threshold the bones of some of their kindred, slain in a recent combat. No locality sufficing to furnish them with the means of subsistence during the whole year, they are necessarily compelled to a nomadic life. However, the Benedictine monks of New Nursie (north of Perth, capital of the colony) seem to have succeeded in initiating a considerable number of natives into the life of the settler and the agriculturist. Notwithstanding the accounts of different writers, it appears that, in the districts of which they have complete possession, the Australians enjoy abundant resources ; for besides a profusion of vegetables and useful roots, nature supplies them with a multitude of animals —

mollusks and fish, fresh water tortoises, frogs, rats, mice, lizards, serpents, grubs, white ants, birds' eggs, kangaroos, squirrels, phalangers, wild dogs, emeus, ducks, geese, swans, and pelicans. The nets, baskets, boats, and weapons, of which they make use, give evidence that they are not destitute of ingenuity and skill. They have been accused of cannibalism; but if this custom really exists, it springs rather from superstitious ideas than from an insufficiency of food.

The government seems to be entirely patriarchal. Each family is independent, and governed by its head; there are no chiefs of tribes nor kings. Their laws are steadfast and respected traditions; thus every old man is authorized to inflict death upon a man who marries before thirty years of age; each individual has territories of his own, upon which he can hunt and collect gums and roots, and his right is respected as sacred, (except by the Europeans.) They reckon by seasons and moons, and are slightly skilled in taking astronomical observations. Their arithmetic does not exceed the figure 3, but they are able to couple and combine these numbers in such a manner as to suffice for their wants. Their language contains nothing harsh, guttural, hissing, or disagreeable; all their dialects evidently proceed from the same stock. They are very fond of dancing and music, and often convoke all the savages of the surrounding country to great dances, to which the women are never admitted except as spectators.

Little is known of their religion. They worship no divinity. They entertain, however, an idea of a Being who has created all things; and they also believe in the existence of an evil spirit, superior to man, the author of storms and all scourges, who causes sickness or death, and against whom they have recourse to their physicians or sorcerers, whom they believe capable of visiting death upon a man even at a great distance. They moreover regard the moon as a malicious being, whilst the sun, its companion, is considered the friend of the savages. They believe that the soul is immortal, and that at the death of one of their number it passes into another body, or else that it flits from tree to tree, at the same time singing plaintively. Christian missionaries have as yet had very little success among them. The European population is still inconsiderable, this colony of Swan River being

more recent, and having up to the present time attracted much less attention than others, from its deficiency in gold mines. In 1849 it lacked laborers, and did not even produce grain enough for its own consumption; for this reason, at the close of that year, and at the petition of the inhabitants, it was declared a penitentiary colony, and in July, 1850, arrived the first *convicts*, or condemned criminals, who were sentenced, in expiation of their crimes, to cultivate, during a certain period, the lands of the colonists, with the prospect of being liberated before the expiration of their penalty, if their conduct proved satisfactory, and of afterwards having it in their power to establish themselves advantageously in a country which requires only laborers.

ADELAIDE COLONY, OR SOUTHERN AUSTRALIA. — This portion of the Australian continent, which is too little known to enable us to describe it minutely, is bounded on the north by illimitable deserts, on the south by a sea which abounds in excellent harbors, among others the Gulfs of Spencer and St. Vincent, between which projects the York peninsula. It has no natural boundaries except on the side towards the sea, those of the land side being at right angles, and forming a vast parallelogram. It has already been subdivided into eleven counties.

The *climate* is extremely salubrious, the sky habitually serene except during a few weeks in winter and as many in summer. Very hot winds are, however, experienced in the plains during the latter season; they proceed from the north, from the deserts of the interior, and although they only blow a few hours, they cause considerable damage among plants. Although the seasons are in this country, as throughout Australia, the reverse of ours, the phenomenon of the *austral aurora*, very similar to that of the north pole, is also observed there.

Minerals. — As we have already stated, these are essentially the precious *copper* of Burra-Burra; rich mines of *lead*, mixed with silver; and *gold* which has been discovered in some places.

The *vegetables* and *animals* do not differ materially from those enumerated in the preceding article. The land around Adelaide (the capital of the colony, two leagues east of the Gulf of St. Vincent) is excellent, and although, in the interior, barren wastes are here and there encountered, this is a circumstance of but lit-

the weight in comparison with the rich natural prairies in which thousands of cattle find their subsistence. Thus in nine years (from 1838 to 1847) the bovine species increased fivefold, from 7500 to 38,000 head, and sheep from 28,000 to 1,000,000. All kinds of cereals and fruits are raised in abundance, and of superior quality — barley, oats, Indian corn, batatas, &c. The grain has attained the highest prices in the English markets, and in 1847 it was exported to a distance, to the colony of the Cape of Good Hope, the Island of Mauritius, Swan River Colony, &c. The proprietors have often been compelled, from the want of reapers, to abandon their grain as fodder for their cattle, which even incited one of their number to the invention of a machine which reaps, threshes, and winnows the grain, and with the aid of two horses and two men, yields 15 bushels of wheat per hour.

The *native population* has suffered less at the hands of the European colonists than in other districts. The *gold discovery*, which of late years has drawn the white population in a mass to the mining quarters, by causing the farms to be deserted, has at least had the good result of developing the capacities of these poor Australians, hitherto held in such contempt, proving them capable of becoming excellent shepherds, sheep washers or shearers, robust laborers or reapers. In the model farm at Port Lincoln, established in behalf of the savages, the natives execute the clearings and the labor of 12 acres of land, and conduct thousands of sheep to pasture without any other superintendence than that of two missionaries of the English church. They prove themselves equal, if not superior, to the Europeans in many occupations of field life. The latter, by interesting them personally in cultivation, and abiding faithfully by the promises which have been made to them, have withheld them from the temptation usually so irresistible to the savages, to return after a few months to the forest life. Why were not these generous and charitable proceedings sooner put in practice?

VICTORIA, AUSTRALIA HAPPY, OR ESTABLISHMENT OF PORT PHILIP. — This establishment has for its boundaries at the west the southern branch of the Pyrenees, at the north the River Murray, and at the east an imaginary line extending from

Mount Kosciusko to Cape Howe, at the south-east of the continent. Its extent is equal to that of Great Britain and Ireland united. It has been subdivided into 23 counties, of which *Melbourne* is the capital.

The *climate* is healthful and temperate, and the transition from one season to another very perceptible. The air is remarkably dry, insomuch that one may sleep in the open air during a great part of the year. As in Southern Australia, the north winds, which are cold in Europe, are scorching in Australia. Happy, and in the same proportion, those from the south which are hot in Europe are the reverse in these regions.

Gold is the only *mineral production*; but in no other part of the world has it been discovered in such quantities, as we have previously had occasion to remark.

Vegetables and *animals* are for the most part the same as those of the preceding countries. The pastures are superb, and nowhere, perhaps, have cattle multiplied so rapidly. The number of horses, among others, is so considerable that every person in easy circumstances possesses carriages and saddle horses. Agriculture has not made proportionate progress, the mines having caused it to be neglected.

The *population*, which had already almost tripled within a period of five years, attained in 1851 the sum total of 95,000 souls; two years after (November, 1853) it numbered 226,000. This extraordinary increase was owing to the *discovery of the gold*, which attracted emigrants into this colony from all countries, far and near. When apprised of the rich discoveries made at Mount Alexander, merchants and clerks, magistrates and clients, quitted every thing to hasten to the mines; schools were closed for want of masters; vessels in the roads were abandoned by their crews; ships loaded with provisions could not disembark their merchandise, and the women, being absolutely deserted, were obliged to congregate together for the protection of their houses; the governor himself was compelled to groom his own horse.

NEW SOUTH WALES. — This colony, the most ancient and celebrated of the English establishments on the Australian continent, embraces all the eastern coast, and even extends very far into the countries of the interior. The different parts of this vast

territory naturally vary widely in products and aspect. At the east of the Blue Mountains, rounded and verdant hills form an undulating and wooded country, which descends by degrees to the coast, and constitutes the principal portion of the Australian colonies. At the west of these mountains, the country inclines towards perfectly open plains of a somewhat uneven surface, traversed by the usually dry bed of a great number of rivers.

The *aspect* of this country presents a general character of aridity, or at least of drought, which is truly saddening to the glance. The soil, over three quarters of the surface of the territory held by the English government, is composed almost entirely of beds of stones, on which no good vegetable earth is formed, and which is consequently ill adapted to agriculture. Grass only, and certain trees peculiar to this country, are wonderfully developed there. Thus the principal wealth of these regions, as of the pampas of La Plata, consists in the produce of their cattle. The grassy plains of the interior, especially when well watered by the rains, are clothed with abundant grass, which rises as high as the body of a horse; but when the dry season arrives, nothing remains but a scorched and dusty soil, where not a single verdant spot greets the eye.

The *climate* is perfectly salubrious, and the seasons the reverse of ours. The winter is more severe than the latitude would seem to indicate; oranges and lemons can, however, even then be gathered from the trees. The autumn is characterized by abundant rains. In summer the heat is oppressive during the day, and occasionally certain very hot winds blow from the north-west, (proceeding from the deserts of the interior,) which scorch the grass and tender plants; the mornings and evenings are mild and agreeable, being refreshed by the night dews; but these dews do not sufficiently moisten the earth. Long months elapse without a single drop of rain. Then the plants, the hope of the husbandmen, droop; impetuous and terrible hurricanes burst forth, which, like the simoom, occasion sand spouts, overthrow houses, and uproot trees. The woods become so dry that the smallest electrical spark or the least friction ignites them, and as in the prairies of North America, clouds of smoke may be seen at a distance, curling upward from the fire, which ravages vast spaces. One after

another, the rivers dry up, henceforth presenting only in spots, and at wide intervals, ponds of green and yellowish water, around which the thirsty cattle flock — sink in the damp mud, and often perish by thousands, without having succeeded in reaching the water itself.

The *minerals* are *pipe clay* of superior quality ; *alum* in great masses ; *salt springs* ; *ferruginous sand*, (iron stone,) in considerable quantities ; the rich *gold mines* of Mount Ophir, and others ; abundant deposits of *fossil coal*, especially on the banks of the Hunter River, in the neighborhood of the city of Newcastle. The coal produced, last year, by 13 of these mines was valued at about \$400,000.

Vegetables. — The virgin forests of Australia sometimes present the imposing aspect of those of America, but with other hues, and a vegetation not elsewhere met with. They are often obstructed by a multitude of parasitic and climbing plants, through which one can only penetrate by the aid of a hatchet. Some of these plants, like the *nettle*, conceal beneath smiling flowers a sharp and venomous thorn, capable of causing the death of horses which are so unfortunate as to be pierced by them. The fern poises its light branches like a waving plume at a height of 15 feet ; elsewhere are nettles which rise still higher ; gigantic reeds form forests in the marshes, whilst on the coasts, inundated by the salt water, there grows a tree, to the trunk and branches of which excellent oysters become attached, which may be gathered from it as if they were a natural fruit.

The forests of gum trees, on the contrary, with their tall and straight trunks, are rarely encumbered by bushes, so that one can gallop through the woods in every direction. By a singular phenomenon, these trees, which constantly retain their pale and slender leaves, annually shed their bark, in the month of March. This bark then becomes detached in strips, unfurls itself like the divisions of a parasol, floats in long fillets over the trunk and branches, and then dries up and turns to dust. All these trees, stripped of their summer robe, then present a singular tint of a pale blue or deep yellow ; they gradually array themselves in a new vesture, and in autumn assume a gray mantle, as if taking precautions against the winter.

New South Wales contains more than a hundred species of leafless *acacias*, which furnish a gum equal, at least, to the purest gum arabic. A species of eucalyptus there met with yields *manna*, a crystalline and savory substance, similar in taste to a mixture of sugar and almonds ; it is collected on the leaves which distil it, or on the ground. The *white cedar* abounds, as also the *red* or *Australian cedar*, from which reddish, light, and durable planks are obtained ; the *araucaria*, or *Norfolk pine*, a very large tree of the north-eastern coast, which furnishes excellent timber, and whose fruits (contained in cones) are so highly appreciated by the natives that they often beat the tree in order that none may escape them ; the *casuarina*, or marsh oak, with its pendent and singularly disposed branches, which also produces good building wood, &c. The *kangaroo grass* covers, far and wide, the plains of the interior.

But although the trees of Australia are generally slender, dry, and destitute of broad leaves, there are nevertheless exceptions to this rule. At the north-east of the eastern coast, in certain valleys whose soil is less arid, and whose freshness is constantly maintained by the sea breezes, flourishes a vigorous and magnificent vegetation. Majestic trees, with thick foliage, form veritable forests, and beneath their lofty tops are tufted groves, where the palm tree and other tropical plants intermingle in all their luxuriance.

The vegetables imported from Europe have succeeded wonderfully ; all the fruit trees, figs, almonds, lemons, &c., grow in the open air, in the vicinity of Sydney, the capital. New Wales promises to become a wine-growing country : in 1852 it exported to London a considerable quantity of wine ; plants from Malaga and Xeres flourish especially. In 1851 it was estimated that more than 100,000 acres were planted with cereals of all kinds, especially wheat and maize. Since that period, the influx of emigrants has greatly augmented the value of the agricultural products.

Animals. — The animal kingdom exhibits in New South Wales the same peculiarities which prevail throughout Australia. Besides the kangaroos and other marsupials of which we have already spoken, the emeus, the dingo, dog, &c., New Wales

produces some very singular edentata peculiar to itself, two species especially, the *ornithorhynchus*, and the *echidna*, which seem to form a link between the edentata and the marsupials. The *ornithorhynchus* is an animal which partakes of the nature of the



Ornithorhynchus.

quadruped, the bird, and the fish. It is about a foot and a half in length, with the thick fur of a mole or water rat, and has short and hairy legs, its feet being provided with a membrane, and its hinder ones with claws. Its head, similar to that of a quadruped, terminates in the beak of a duck, in which a masticating apparatus takes the place of teeth, and suffices for grinding the insects upon which it subsists. It dwells on the borders of rivers, in burrows with two openings, one above and the other below the level of the water. It preys upon aquatic insects, small fish, or seeds which it finds in the mire. It prefers the overgrown banks, where are found thick tufts of aquatic plants. At the slightest alarm it plunges into the river; and in order to kill it one must take aim at the moment when the necessity of breathing compels it to lift its head above water. All that has been related concerning the eggs that it lays appears to be fabulous. The natives are very fond of the flesh of the *ornithorhynchus*; but these singular animals are now rarely encountered, except at the western base of the Blue Mountains.

The *echidna*, or *porcupine anteater*, resembles the *ornithorhynchus* in its general structure, but differs from it entirely in appearance, being covered with quills like a porcupine. It is a toothless animal, which lives in burrows, and subsists on ants in summer, but sleeps during the winter. It has, like the anteater, a long muzzle terminating in a small species of bill; it seizes and retains insects with its tongue, which is long and very elastic; it is also

armed with strong claws, of which it makes use in speedily digging itself a burrow.



Porcupine Anteater.

New South Wales presents many rare species of birds. The *menura superba*, or *lyre bird*, so called on account of its tail in the form of a lyre, variegated with the most beautiful colors,—orange



Lyre Bird.

and silver,— is the only bird which in its character approaches the gallinaceous family. *Parrots* of all colors, among others black, and all living in companies, perpetrate great ravages in the planted fields, during the execution of which they take the precaution to station sentinels at certain distances, in all directions, to give notice of the approach of an enemy. The *bell bird* creates in the air a vibration like that of a bell—a signal hailed with joy

by thirsty travellers, for it invariably announces the vicinity of a spring. The *mocking bird*, which passes its time in counterfeiting the cries of all the rest, is spared by the hunters (although it often deceives them) on account of the desperate war which it wages against reptiles.

When night veils the Australian continent, other sounds of life succeed those of day. This is the hour when the *cuckoo*, idly sleeping during the day, awakens to utter its two unvarying monosyllables. This is likewise the hour when the harsh cry of the bird, called by the English *coach whip*, resounds like the cracking of a whip, and when the mewing of the *cat bird* is heard, which resembles the sobbing of a child. At this hour, also, the flying squirrels precipitate themselves in famished bands upon the flowering trees, and like the sparks of a rocket, fireflies of various species glitter in the open space.

But the most singular bird, perhaps, is the *bower bird*, (or *cradle bird*,) so called on account of the leafy bower which it constructs with much labor and skill, to serve it as a place of recreation and assembly. This bird, which subsists on berries, insects, wild figs, and wheat, first interlaces branches of cedars, or other trees, in such a manner as to form a species of platform; then above, and adhering to it, a kind of cradle of smaller and more flexible branches is arranged so as to form a hollow, the interior of which is carpeted with brilliant feathers, and all kinds of curious or gaudy-colored objects, which attract the fancy of the bower bird. In these cradles, which last several years, it has been observed that a certain number of these birds assemble and engage in all kinds of sports, and the cradle is rarely deserted.

The reptiles and insects are remarkable in more than one respect. Lizards may be seen there of four feet in length, whose flesh, when roasted, acquires an excellent flavor: the prickly lizard, surnamed by the colonists *devil of the woods*, owes its name to the formidable appearance which is imparted to it by its motley colors, and the prickles with which its whole body is bristling; and yet it is incapable of doing injury, even to him who takes it in his hands. The *chlamydosaure*, or *mantled lizard*, received its name from an enormous collar of thin skin, covered with scales, and denticulated like a saw, by means of which the animal

can shoot fearlessly from bough to bough in the pursuit of insects, for if it chances to fall, the air dilates its mantle like an umbrella, and it alights gently on the ground without violent shock.



Mantled Lizard.

The *serpents* are undoubtedly very venomous, but make comparatively few victims. They usually frequent certain peculiar localities, where too much precaution cannot be taken in approaching the thickets, or seating one's self upon the trunk of a tree. The smallest are the most dangerous. The *deaf viper*, which is only a few inches long, and which, on account of its deafness, does not flee from man, is especially formidable. The *diamond snake* attains to 15 feet; the natives eat those which they have killed, and which they are assured have not bitten and consequently poisoned themselves. It is usually related of the birds of Australia that they cry, and do not sing, likewise that the flowers are magnificent in color, but destitute of perfume. These assertions, which are true with regard to the greatest number of species, are not, however, without exceptions. On the other hand, the frogs never croak, but sing in a truly harmonious and musical manner. The bees deposit their honey in the hollows of trees, and it is highly relished by the natives, although it is acidulated rather than sweet. The *locusts* are a serious scourge, especially where the cultivation of grain is most successful. The *caterpillars* are

another scourge of the fields, appearing suddenly, and sometimes in inconceivable numbers. The *carnivorous fly*, as large as a bee, diffuses over the wounds of men and animals, and even over cooked meat and woollen fabrics, large quantities of eggs, which are almost immediately transformed into worms; often in the morning a blanket is found to be full of them; they are very rarely seen in the winter season. The insects which are called *sand flies*, because they are no larger than a grain of sand, appear, on the contrary, in the winter months, when the pernicious sirocco wind blows almost imperceptibly; they so affect the nose and eyes as sometimes to compel the husbandmen to desist from their labors. These swarms often resemble a cloud; a light breeze is sufficient to dissipate them. The *gadflies* do much mischief among the cattle, and the *gnats* give rise to a disagreeable inflammation among the newly-arrived colonists. We have previously spoken of the large yellow worms, called *grubs*, which subsist on the decayed trunk of the xanthorrhæa, and which constitute one of the most habitual and esteemed dishes of the natives. Eaten alive, they have somewhat the resinous flavor of the plant; when cooked, they possess that of the roasted chestnut. Similar worms are found in the roots of certain acacias and some species of eucalyptus.

A monstrous ant, about two inches long, and of a reddish color, surnamed by the colonists *ant lion*, inflicts a pain so acute that one would imagine himself bitten by a serpent. The ants of medium size form such beaten paths that they might be supposed to have been worn by goats. There are *white ants*, whose dwellings, from 4 to 5 feet in height, and from 8 to 10 in circumference, can resist, it is said, the weight of a wagon. As many as 80 of these constructions have been counted on one square mile. These mischievous creatures devour every species of vegetables, even the hardest wood, and endanger the existence of all kinds of constructions.

Population. — The aboriginal population have almost entirely disappeared at the east of the Blue Mountains, except in the north-eastern portion. More ill used than elsewhere by the colonists, and by the fugitive convicts, deprived of their lands, and reduced to profound misery, brutalized by drunkenness, and cor-

rupted by the vices communicated to them by the wretches whom the English society has diffused in their midst, these unfortunate remnants of once strong and vigorous tribes seem to be the most debased of the human race, and must continue to inspire the philanthropist with a lively compassion until they have completely disappeared. Those of the interior, brought less in contact with the whites, have preserved, to a greater degree, the characteristics peculiar to this race, and generally resemble those of Western Australia, of whom we have already made sufficient mention.

A European population, which is still inconsiderable, is disseminated over immense spaces in the 46 counties of which the colony is composed. It is divided into two principal classes, distinctly and absolutely separated from each other, not by law, but by custom, and between whom there exists no more affinity than between the free Americans and the descendants of the negroes, viz., the *class of free men* and the *government class* or *discharged convicts*. From the insurmountable prejudices which pitilessly banish from good society even the irreproachable descendants of former convicts, it has resulted that the latter, debarred from all relations except with each other, boast of their disgraceful descent, and maintain a no less exclusive deportment towards their adversaries. Crimes are very frequent in the midst of a population of such equivocal origin; but can this occasion surprise when one reflects that in 1849, out of 25,000 emigrants, 1226 were convicts? However, in 1850, among a population of 246,000 souls, there were computed only 3500 convicts. These criminals are usually despatched as domestics to the colonists, but many among them escape, gain the woods, are there organized into bands of robbers, and become the scourge of the European establishments, and the torment of the unfortunate natives, whom they exasperate, render ferocious, and finally kill, or oblige to flee to a distance: some among them, also, greatly harass the missions.

Except in the neighborhood of the towns, and in certain places where the soil is particularly favorable, little is cultivated except the quantity of wheat necessary for the consumption of each establishment, and most of the colonists devote themselves rather to pastoral life. Each of them possesses an extent of several square miles, which he calls his *territory*. There are some pro-

prietors, who, at the period when the land west of the Blue Mountains was sold for five shillings an acre, acquired domains equal to German principalities, farms of 50,000 acres, containing 25,000 sheep, 3000 oxen, 300 horses, &c. On the most convenient point of his territory the *squatter* erects a house, which serves as a residence for the chief of his shepherds, (if he does not himself fill that office,) near which he always makes choice of a field designed to produce the wheat necessary for the subsistence of the individuals charged with the guardianship of the droves. One shepherd is usually intrusted with the care of 2000 sheep, and the keepers of the oxen are much more numerous in proportion. The sole occupation of the squatter consists in once or twice a day visiting his domain, in order to superintend his shepherds. Shearing his sheep, packing the wool for the ports on the coast, or boiling in vast caldrons the other animals, from which tons of tallow are extracted, which rivals that of Russia; then transporting his produce to Sydney, where he consoles himself for his long isolation by foolish expenses, — these, together with the occasional visits of his neighbors, constitute the only interruptions to the monotonous existence of the colonist of the interior. The production of wool, tallow, and hides is such a certain source of wealth to this colony, that it has by no means been checked by the gold fever, which had indeed an entirely contrary effect. In fact, England, which received from Australia, in 1850, scarcely 8,000,000 pounds of wool, derived thence, in the three succeeding years, 9,000,000, 9,500,000, and 10,500,000. The exportation of tallow during the last year amounted to the sum of \$740,000. The arrival of the emigrants attracted by the discovery of gold immediately raised the price of cattle. It was previously valued so low that it has been stated that at least 62,000,000 pounds of excellent meat were suffered to spoil. In 1843, a sheep was worth only 12 cents; it was then that the manufacture of tallow was undertaken, and immediately the prices were sensibly augmented.

NORTHERN AUSTRALIA, OR PORT ESSINGTON. — The difficulties of navigation among the innumerable islands and shoals which are found at the entrance, and amidst the Strait of Torres, having caused the shipwreck of many vessels, whose crews

perished miserably on the northern coast of Australia, the British government judged it necessary to found an establishment which might serve at once as a commercial emporium and a port of refuge. A city, which received the name of *Victoria*, was founded at *Port Essington*; but the insalubrity of the climate and the want of good lands completely discouraged the colonists, and the establishment was declared annulled on the 10th of June, 1849. It has never, to our knowledge, been replaced. These regions are therefore almost entirely unknown.

The *vegetation* appears to be generally poor, and but little varied; it has some resemblance to that of the Isles of Sunda.

The *animals* are those of the rest of the Australian continent—kangaroos, and other marsupials, emeus, black swans, &c. A very singular trait of the *n'gou*, or *leipoa*, is the manner in which it deposits its eggs. It is said to construct a pyramid of earth or sand, seven feet in diameter and three in height, in the top of which it pierces a cavity of a foot in depth, where it lays its eggs, leaving them to be hatched by the heat of the sun; but when the young are on the point of hatching, the mother returns in search of them. The English naturalist Gould, in his great work on the birds of Australia, enumerates three species of these constructing birds, which he calls *megapodides*; and one of these species, if the statements of travellers may be credited, builds nests 150 feet in circumference, and 24 in height: it is presumed that they have been thus enlarged from year to year. *Crocodiles* have been observed in the rivers of this portion of Australia. Many *tortoises* are found there, among others *green tortoises*, which are seven feet in length, three or four in width, and weighing five, six, and even eight quintals. In certain places, the plains appear to be studded with houses, which, on a nearer view, prove to be simply the conical and singularly clustered huts of the white ants or termites.

New Guinea is so called on account of the resemblance of its inhabitants to the negroes of Guinea, in Africa. It is now more commonly called Papua, from the name of the Papous or Papuans, which form an important part of its population. It is situated north of Australia, from which it is separated by the dangerous Strait of Torres. The vast *Bay of Geelvink*, penetrating into the

northern coast, produces an isthmus, and divides the island into two peninsulas, the most western of which is the smallest and best known. In the interior are found high mountains, whose summits are crowned with eternal snows, and on whose sides navigators have descried from a distance magnificent cataracts falling from rock to rock. All these mountains are clothed with the most exuberant vegetation, amid which predominate palm, cocoa nut, sago, nutmeg, bread trees, &c.

As in Australia, few animals are encountered in this island except marsupials, kangaroos, &c. But the admiration of voyagers who have landed in New Guinea has always been excited by its birds of gorgeous colors, which are truly among the most beautiful wonders of creation. The numerous family of the *birds of paradise* hold the first rank for incomparable brilliancy of



Bird of Paradise.

plumage; their long tail, of a flame color, is often worn as an ornament by European ladies. Independently of these beautiful feathers, most of the species have also fillets from two to three feet long. Others, such as the *sifilet*, (six fillets,) have on their heads six feathers, disposed like the fillets of the tail, but much shorter, and terminating on each side in broad beards, besides a tuft which rises at the base of the beak, presenting magnificent

shades. The *superba*, possessing, as it were, a double story of wings, diverging in rays, and under the neck an azure fan, also tapering in points, resemble, when flying, a star wandering in



Superba.

space. The *great paradise*, with emerald-green plumage, a neck equally green, but shaded with gold, and with silvery sides, seems likewise to present beneath its wings two other wings, which are exceedingly light. The most beautiful of all is the *red paradise*, whose sides are decked with brilliant red plumage, and whose throat sparkles with emerald and gold, whilst two fillets hang in graceful pendants from its superb tail. All these birds, which are very common in this country, constitute an object of foreign commerce with the natives.

These are not the only remarkable birds of New Guinea; to them may be added legions of paroquets, and among others *cockatoos*, the largest parrots of the old world, usually white, with a yellow tuft, which is movable at the will of the bird; *horn bills*, the singular and often enormous excrescences of whose bills have sometimes caused them to be surnamed *rhinoceros birds*; the *argus*, of the pheasant species, so called on account of the multitude of eyes with which its plumage is interspersed; and *red* and *tri-colored loris* and *kingfishers*, of unrivalled beauty. In this

country, moreover, are found menures lyres, and other birds of New Holland.



Cockatoo.

The *population* belongs to two different races. The indigenous negroes, *Harafouras*, of a dingy brownish-black skin, with short and rough hair, an extremely wide mouth, and a frightfully hideous aspect, are reputed cannibals, and generally inhabit the forests and mountains of the interior. The *Papous*, more or less intermingled with the Malays, usually occupy the coasts, and are especially numerous in the small western peninsula. They have also very dark brown skins, but their features are quite regular; their forms tall, although slender; and owing to their habitual contact with the populations of Malaysia, they are possessed of a certain civilization, and a knowledge of the most elementary arts. Their greatest peculiarity is their crispy, rough, and brilliant black hair, usually piled on their heads in enormous masses, sometimes three feet in circumference, and which they adorn with

*Papous.*

beautiful bird of paradise feathers. Their huts are no less curious than the occupants ; they are generally built on piles above the water, which shelters them from swarms of insects, and from

*Papou Huts.*

the attacks of the Harafouras. Almost all these populations are pagans, with the exception of a certain number of Papous

who have become Mahometans. No Christian church has yet undertaken the labor of the conversion of this vast country. The Dutch, however, in the year 1828, founded an establishment on the western coast.

New Britain (comprising *New Britain*, properly so called, *New Ireland*, *New Hanover*, &c.) is a considerable archipelago, situated at the north-east of New Guinea. It is inhabited by ferocious natives, bearing some resemblance to the Papuans, but very little known. The forests, which appear to be remarkably fine, contain teak wood and nutmeg trees.

The vast cluster of the *Solomon Isles*, south-east of New Britain, is likewise inhabited by black Papuans of some intelligence, but who are always at war with each other, and devour their prisoners. They cultivate the land, possess villages and beautiful boats, and manufacture for themselves excellent weapons. Reefs and coral banks render the approach to these islands very difficult. The *Solomon Isles*, like the preceding, do not seem to have attracted the attention of Christian missionaries.

The little archipelago of *Santa Cruz*, south-east of the *Solomon Isles*, owes all its celebrity to the shipwreck of the unfortunate



Vanikoro Islander.

French navigator La Pérouse, who, with his two ships, was wrecked in 1788, on the reefs of the small island of *Vanikoro*, where a monument has since been erected to his memory.

The much more considerable archipelago of *New Hebrides*, or *St. Esprit*, is composed of many very fertile islands, embellished by a rich vegetation, and inhabited by cruel blacks, who are always at war. Fifteen years ago, they massacred the celebrated evangelical missionary Williams, surnamed by the English the *apostle of Polynesia*; but since that period the gospel has made great progress among them. The murderer himself has been converted, and in the very island of *Erromango*, where the missionary and his companions suffered martyrdom, there are now found zealous Christians and schools.

Still more encouraging changes have been effected of late years in the *Loyalty Islands*, a little archipelago, situated south of the preceding. Owing to the courage and devoted zeal of native missionaries, against whom the savages entertain fewer prejudices than against the Europeans, the inhabitants of whole islands have been won over to the evangelical faith, have renounced idolatry and war, erected chapels and schools, adopted the use of decent garments, and lead an honest and peaceable life.

New Caledonia, south-west of the preceding, is a large island, from 80 to 90 leagues in length, and from 18 to 20 in breadth, dangerous of approach on the south-western side, on account of a terrific chain of shoals which border it and extend to a distance. It is traversed from one extremity to the other by mountains, whose composition has led the French expedition, which has recently taken possession of this country, to suspect that they might even contain gold mines. At all events, the existence of abundant mines of *coal* has been ascertained. In the southern portion there are beautiful forests — the bread tree, the banana, and the cocoa nut flourish in this island; the natives cultivate the sugar cane and the *arum*.

This latter plant, the most precious to the inhabitants of the small islands of Oceanica, next to the bread tree, is also known by the name of *taro*. It is a large, oblong, and tuberous root, being from 9 to 12 inches in length, and from 5 to 6 in diameter. It is destitute of a stalk; its broad leaves assume the form of a heart, and its flower is enclosed in a kind of sheath. It is cultivated in marshy places. This root, in its raw state, is extremely acrid. If placed in the mouth, it occasions not only a sharp pain,

but also burnings of the tongue and palate. But when cooked, after being stripped of its bark, it constitutes a mealy and very nutritious substance, almost precisely resembling the potato.

The animal kingdom in New Caledonia is very poor; dogs, and even hogs, were unknown before the arrival of the Europeans. On the other hand, many birds are found there, and a large spider, which serves for food, and whose webs are so strong that, in tearing them, one experiences a certain resistance. The inhabitants, who are also Papuans, are large and robust, warlike, sanguinary, and even addicted to cannibalism. Catholic missionaries have already obtained marked success in many portions of this large island, and have begun to initiate the savages in the elementary principles of our civilization. The occupation of this country by France will, doubtless, exercise a powerful influence upon this growing work.

The *Feejee Islands*, east of the New Hebrides, form the most eastern archipelago of Polynesia. It is composed of two large islands, Viti Levu and Pao, and multitudes of smaller ones. During a long period, these islands were frequently visited by English or American vessels, which came thither in search of *sandal* wood, to be sold in China, considerable quantities of which were obtained in exchange for a few pairs of scissors, nails, or mirrors, for which the natives were very eager; this wood has now become rare and expensive. The inhabitants are blacks, of the Papuan race, well formed, strong, vigorous, intelligent, and industrious. Unfortunately, they are the most ferocious cannibals of all Oceanica. Not only do their chiefs select from among their prisoners those which are destined to be devoured, precisely as a butcher chooses from his flock the animal which he intends to slaughter, but it is no rare event for a band of men, quietly occupied in fishing and cultivating the ground, to find themselves unexpectedly attacked by a stronger band, who massacre all those who cannot make their escape. The following days are devoted to prolonged festivals, and amid great rejoicing the victims are devoured. Even the children take part in these atrocious feasts. A chief would consider himself dishonored, if, upon receiving a visit from another chief, he could not procure him an entertainment of human flesh. Add to these traits of barbarity the most

revolting harshness towards the infirm and sick, who are usually massacred ; and, also, towards the women, who supply the place of beasts of burden, and are employed in the roughest labors, (the



Islander of Feejee.

widows being strangled at the death of their husbands,) and some conception may be formed of the repelling manners of the Feejeeans.

But already, by the grace of God, has the light of the gospel begun to penetrate this profound moral darkness. First, missionaries from Polynesia, and afterwards English missionaries, inspired by the love of Christ, introduced the religion of peace into the midst of these sanguinary and pitiless populations. Frequently maltreated, repeatedly banished, always laboring in the face of death, they have courageously pursued the good work which they had undertaken ; and, although wars and murders have not yet entirely ceased, the moral influence of the evangelical preachers now succeeds, in most cases, in preventing the greatest excesses. The natives, after becoming Christians, absolutely renounce the ancient animosities of one village for another, and all

the customs appertaining, directly or indirectly, to idolatry and cannibalism. They may be seen decently clothed, frequenting in crowds the chapels and schools, where numerous children are carefully educated. Young and old evince a decided taste for reading, and all manifest the most lively desire to possess the Bible, translated into their own tongue. In one, alone, of the islands of this archipelago, that of *Lakemba*, no less than 1300 persons have been baptized within the last two years; about 800 of whom were adults, only admitted after their conversion had undergone a thorough test. Every thing, then, gives encouragement that Christian civilization will, ere long, have completely transformed these populations, recently so perverse and degraded.

Van Diemen's Land, called also *Tasmania* from the name of the Dutch navigator (Tasman) who discovered it in 1643, is a large, triangular island, situated south-east of Australia, from which it is separated by the *Strait of Bass*. Its coasts are high, wooded, and indented by excellent harbors. It is watered by numerous and beautiful rivers, the principal of which are the *Derwent*, which empties at the south into the spacious Storm Bay, and the *Tamar*, which flows towards the north, where its mouth forms Port Dalrymple. Many chains of mountains, alternated by charming valleys, and encompassing vast and fertile plains, run in different directions. The climate is healthy and temperate, but cold rather than hot; it is very similar to that of England, with the exception of the fogs. Iron has been found in great quantities; also copper, pit coal, amianthus or asbestos, alum, slate, and salt. In respect to the *vegetable* and *animal* kingdoms, there exists a striking resemblance between Van Diemen's Land and Australia. The cereals and fruits of temperate Europe (the vine excepted) succeed to perfection, and the aspect of the cultivation of this beautiful English colony is precisely that of the regions of Western Europe. Many horses, oxen, and sheep are raised there. Although among the animals of the forests, the wild dog, or dingo, is unknown, this country produces an animal which executes serious ravages among the flocks; this is the *dog-headed opossum*, commonly known by the name of *zebra opossum*, or *zebra wolf*, on account of 15 or 16 transversal stripes, descending from the back to the legs across its smooth and dark brown hair.

It is of the size of a young wolf, and dwells among the ravines and highest valleys of the mountains. This is the largest carnivorous animal of the austral regions. It hunts only by night; during the day it is affected by an incessant winking of the eyelids, and its motions denote little intelligence. The kangaroos, emeus, black swans, &c., are rapidly disappearing before the progress of colonization.

The native *population* has for many years been extinct, having been exterminated by the European emigrants and convicts transported from England, precisely as in New South Wales. Van Diemen forms a flourishing and prosperous colony, where all religious sects have their pastors and schools, and rival each other in efforts to moralize and enlighten this mixed community, compounded of so many impure elements.

SECT. 3. WESTERN OCEANICA, OR MALAY ARCHIPELAGO. — This name has been given to the great Indian Archipelago, situated south-east of Asia, because it is principally inhabited by the Malay race.

Isles of Sunda. — These islands, of superb and exuberant vegetation, form, at the north of Australia, a long chain which extends from west to east, commencing at the extremity of the peninsula of Malacca. The principal are Sumatra, Java, and Timor.

Sumatra, the largest, stretches from north-west to south-east. It is traversed from one extremity to the other by a chain of volcanic mountains, of which *Mount Ophir* is the highest peak. The coasts are generally low, marshy, and unhealthy. Although situated under the equator, which divides it into two almost equal parts, this island has not a burning climate; the rainy or north-west monsoon commences in December and ends in March. Sumatra contains mines of various metals, and especially gold bearings, which are tolerably rich, but which the islanders can only explore by washing. As the other products are generally the same as those of the two peninsulas of India, we shall only enumerate here those which are peculiar to the island, or of especial importance to its inhabitants. Among the vegetables, the *pepper plant* holds the first rank; in 1842, Sumatra produced 32,000,000

pounds of pepper. *Rice*, which includes a great number of species, forms the staple food of the natives.

Next to the rice the most precious plants are the cocoa nut and the banana trees, of which we have already spoken elsewhere. The *cocoa nut* is a tree of the great family of palms, useful at



Cocoa Nut.

once in its wood, its sap, its fruit, and its leaves, which are suitable for covering houses. Its trunk, from 70 to 90 feet in height, is used for building wood; its leaves, from 10 to 15 feet in length and three in width, serve not only for covering houses, but also for manufacturing paper, mats, and sails, and for nourishing ele-

phants. From the sap is extracted a black sugar, vinegar, and a kind of wine which is very agreeable to the people of the country. The fruit, or cocoa nut, is as large as a man's head, of an elongated and somewhat triangular form. Before it ripens, this nut contains a kind of milk, or liquor, capable of allaying thirst, and very agreeable to the taste. It may be procured without cracking or breaking the nut, by piercing three small holes, which are covered only with thin bark, and found at one of the extremities of this very hard shell. The meat, when ripe, has the taste of the hazel nut, and furnishes either a very agreeable aliment or oil suitable for burning. This nut is enveloped in a fibrous matting,

*Banana,*

of which thread and cloth are woven ; the rind or shell of the nut is employed, on account of its hardness, in the manufacture of vessels and various utensils.

The *banana* is a plant remarkable for its leaves of prodigious size, and its enormous bunches or clusters of fruit, of which one alone may weigh 70 pounds, and contain as many as 160 of the fruit: the latter is a very nourishing substance, and is usually eaten cooked. The banana is one of the most useful and generally diffused plants on the surface of the globe.

This island furnishes a great quantity of *camphor*, which is obtained both by simple incisions in the trunk of the tree, (this is the purest,) and by distilling the branches or roots ; each tree is capable of yielding about three pounds. The *rotangs*, or *ratans*, of Sumatra are exported to Europe, to be used as canes. This island abounds in *mangoes*, one of the most exquisite fruits known, in *pine apples* and in *palm trees*, which are more numerous in the Isles of Sunda than in any other part of the world. But the principal vegetable curiosity of this island is the *rafflesia arnoldi*,



Babyrussa.

bearing a flower of enormous size. This is a parasitic plant, whose very small root grows at the foot of certain trees; its buds are of the size of an ordinary cabbage, and the flower, when expanded, is eight or nine feet in circumference, and sometimes weighs 15 pounds; its calyx might easily contain 12 pints of water. Unfortunately, this very remarkable flower exhales a disagreeable odor, like that of tainted meat.

The *animals* are essentially the same as those of India — elephants, rhinoceroses, hippopotami, and crocodiles; tigers, black bears, deer, wild boars, tapirs of two colors; many monkeys, among others gibbons and orang-outangs; the *salangane*, the species of swallow whose nests are eaten; the *babyroussa*, a kind of wild hog with very large tusks, which curve backwards; and the buffalo, which takes the place of the ox, and is alone employed in tillage. But few of the latter are found in the wild state, as they are mortally pursued by the tigers which abound in the forests.

The *population* is composed of Mahometan *Malays*, who are now the dominant race, and of the ancient, black, indigenous inhabitants, still, for the most part, pagans, among whom are cited colonies who, like the *Battas*, are cannibals, and in the event of certain crimes, condemn the guilty to be devoured. We are even assured that they were formerly in the habit of eating their aged parents. The *Dutch* have important establishments in the southeastern part of this island.

Among the numerous islands adjacent to Sumatra, we shall only specify *Banca*, renowned throughout Asia, and especially in China, for its rich tin mines, and *Billiton*, where much iron is found.

The *Island of Java*, east of the preceding, from which it is separated by the *Strait of Sunda*, is one of the most beautiful and fertile in the world. It is very mountainous, and contains 30 volcanoes which cause terrible earthquakes, and emit ashes, lavas, and sulphurous vapors; besides sometimes disgoring water and mud over considerable spaces, which are thus completely laid waste. The southern coast is steep and almost inaccessible; the northern coast, on the contrary, is flat, marshy, and possesses many ports.

The *climate* is very hot in the plain, and was formerly considered pestilential, but has now become salubrious; Europeans should, however, take the precaution of resorting, during the rainy monsoon, to the high countries of the interior for the enjoyment of fresh and healthful air.

The *vegetation* of Java is of extraordinary luxuriance. The soil, composed of the best vegetable mould, always moist and stimulated by the ardent heat of a tropical sun, produces trees, whose trunks, owing to their rapid growth, are of a spongy nature, whilst the trees themselves are overladen with parasitic plants, and especially with *orchideæ*, more than 300 species of which are peculiar to this island. Ferns, in the form of trees, compose a large portion of the vegetation of Java; mosses, which creep in cold countries, there attain three feet in length. No other country presents so great an abundance and variety of indigenous fruits and nutritious vegetables, mangoes, pineapples, &c. There are, it is said, a hundred varieties of rice, and the number of odoriferous flowers, shrubs, and ornamental trees is infinite. On the other hand, the nettle tribe is here characterized by the most pernicious qualities; even those which resemble our common nettle contain a poison so acrid that their sting occasions, in Java, not only a painful sensation, but also a malady which lasts several days. None of the vegetables of this class, however, are possessed of such a poisonous nature as the famous *upas*, concerning which marvellous accounts were for a long time circulated, alleging that it destroyed plants at a distance, and that men and animals could not approach it without endangering their lives. The truth is, that its sap only is noxious; but it is of such energy that a few grains introduced into the cellular tissue of a dog are sufficient to cause the animal to perish in a short time in horrible convulsions; thus the Javanese make use of it, in time of war, for poisoning their arrows. But, although some of the trees of this family are remarkable for the sharpness of their milky juice, there are others which yield fleshy, mild, and agreeable fruits, some of which constitute almost the only nourishment of entire countries. Such are those of the different varieties of the *bread* or *jacca tree*, (*artocarpus*) which are as large as the head of a child, and which, cooked in the ashes or in an oven, acquire

a taste analogous to that of the chestnut, and supply the inhabitants of the islands of Oceanica with a food which is both whole-



Jacca, or Bread Tree.

some and abundant. The vast forests contain excellent woods for building purposes or for furniture, such as the teak or ebony, as likewise trees producing extremely valuable resins — the *gutta percha*, a substance already mentioned in connection with Indo-China, and whose utility appears to be even greater than that of the caoutchouc; and the *benzoin*, a resin similar to incense or myrrh, and which is procured by means of incisions made in the bark of a large tree of the storax species; it is employed in medicine and as a perfume. Java exports to Europe a considerable quantity of ratans, and *sapan wood*, also called *India Brazil wood*, a tree which furnishes a red color similar to that of the Brazil wood.

Cultivation is generally very well understood, and affords the Dutch masters of this beautiful country very rich revenues. Rice, coffee, sugar, indigo, tea, and the cochineal are the principal colonial commodities which are obtained from this country. The rice plantations usually occupy the plains; coffee groves crown the hills; on the slopes of the mountains extend vast nurseries of tea, which cannot, however, rival that of China; in the same places, the cochineal cactus is planted in symmetrical rows, and covered with a roof of palm leaves, transported on roll-

ers, and designed to protect both the insect and the plant from heavy rain storms.

Animals throng the forests ; they consist of rhinoceroses with one horn, (while those of Sumatra have two,) the terrible black panther of Java, stags, gazelles, the pygmy musk, whose body is scarcely as large as that of the hare, and *flying dragons*, very graceful lizards of a beautiful green, which flit from branch to branch, and sustain themselves in the air as upon an umbrella, by means of a skin, which, on each side of the body, extends from one leg to the other. *Tigers* are, moreover, the terror of the country, devouring every year 200 or 300 inhabitants. The Javanese, like the Sumatrans, entertain a superstitious respect for this animal ; they often assemble in one of their villages to present to the ferocious beast offerings of meat and the remains of animals, hoping that through gratitude it will exercise forbearance towards men. Elsewhere they have the same reverence for crocodiles, which, with certain serpents, abound in the rivers. The buffalo is the principal domestic animal ; the salanganes build their nests in grottos on the borders of the sea, and these nests are sold in Java for \$15 a pound. A remarkable bird, which is met with in most of the islands of Malaysia, as well as in India, is the *helmeted cassowary*, so called on account of the kind of horned helmet by which its head is surmounted. It belongs to a different species from the emeu of New Holland, which it however resembles in its size, its hairy feathers, and its wings, useless for flight, being provided only with a few long quills, comparable to pen stalks.

The *population* appears to be composed of a race akin to the Hindoos, whose language, manners, and religion, it formerly possessed. It is now Mahometan, and the Dutch Protestant missions have not, up to the present time, been attended with very great success. The Javanese, subject for the most part to Holland, are mild and peaceable Malays, patient, superstitious, and tolerably well informed, but indolent, false, addicted to vice and polygamy, passionately fond of opium, games of chance, and especially of cockfights. The other inhabitants are Dutch, in inconsiderable numbers, and many Chinese, who come thither to gain a livelihood, as laborers or merchants.

*Javanese Soldier.*

Timor is a large, but by no means fertile island. It exports sandal wood, wax, and salangane nests. The soil is dry and stony, and but for its bananas, cocoa nut, and jacca trees, *Timor* could not maintain its feeble population. The Dutch possess the south-western, and the Portuguese the north-eastern part. The small islands of *Sunda*, *Madura*, *Bali*, *Lombock*, *Sumbawa*, *Flores*, and *Sandal Wood*, furnish almost precisely the same products as the larger ones.

THE MOLUCCAS, OR SPICE ISLANDS. — North-east of *Timor* commences the archipelago known under the name of *Moluccas*, (in Arabic, *Royal Islands*,) comprising *Gilolo*, *Ceram*, *Booro*, *Amboyna*, the *Banda Islands*, *Batshian*, *Oby*, and *Waigeo*. All have the character of volcanic countries; their shattered aspect, singularly grouped rocks, towering to great height, and numerous volcanoes, both extinct and in activity, certainly indicate a region long rent by convulsions.

Climate. — The *Moluccas* are the most unhealthy of all the islands of the Indian archipelago: criminals have often been transported thither.

Vegetables. — The *Moluccas* are naturally of little fertility, and

the Dutch are obliged to procure from the Islands of Sunda many of the commodities which are most indispensable to life. The bread tree, the cocoa nut, and various useful vegetables of India, succeed there; nevertheless, it may safely be asserted, that, but for the sago palm and the spice trees, Europeans would never have dreamed of establishing themselves upon these rocky soils. The *sago tree* is a species of palm, from whose marrow an excellent fecula is obtained, which, among the natives of the country, supplies the place of bread. After the trunk of these trees has been cut longitudinally, the marrow is removed, grated, and washed in cold water; a paste is then made of it, which is passed through a sieve, being rolled in such a manner as to reduce it to small grains. It is first dried in the sun, and afterwards by the



Sago Palm.

heat of a very slow fire. It is said that a single tree may yield 400 pounds of sago. These small grains, of different shades of color, and of the size of a large pin's head, when prepared with milk or other ingredients, form excellent soups, frequently recommended to the sick as a very mild nourishment, at once nutritious and agreeable. Sago is principally procured from the Moluccas.

The *nutmeg* is exported to us almost exclusively from the group of Banda, although, at the close of the last century, this cultivation

was introduced by M. Poivie into the Isle of France, whence it has passed to Cayenne and the Antilles. After exterminating the natives from these islands, the Dutch established European colonists there, upon the condition that they should furnish the nutmeg only to the Dutch Company, and at a fixed price. The nutmeg is a tree of about 30 feet in height, very bushy, and resembling an orange tree. The flower has some resemblance to the lily; the fruit is almost the size of an apricot, and not very different in color. When ripe, it opens spontaneously, and exposes to view the aril, or *mace*, a dark-red envelope, beneath



Nutmeg Tree.

which is found a kind of frail shell, which constitutes the immediate covering of the kernel, or nutmeg, properly so called. The latter is round or oval in form, of the size of a small nut, capable of being cut with a knife, of a brown color, and internally veined.

After being well dried and soaked in lime water, which secures them from the attacks of insects, the nutmegs are exported to Europe, where they are employed as aromatics in the preparation of dishes, or in medicine as a very energetic stimulant. The mace serves similar purposes; the *male nutmeg*, so called, is the fruit of the wild nutmeg, and is not possessed of the same properties. The *clove* is one of the most elegant of trees, of pyramidal form, always green, and always adorned with an innumerable



Clove Tree.

multitude of pretty rosy flowers. The *clove*, which many authors have mistaken for the fruit of this tree, is merely the bud or the flower, gathered before its expansion, then immersed in boiling water, and exposed during a few days to smoke, before being dried in the sun. Although the French have introduced the cultivation of this tree into Bourbon, Cayenne, and the Antilles, yet the Dutch have always the principal monopoly of the clove. For a long time they even caused the clove trees to be uprooted every where except in the Islands of Amboyna and Ternate. The

young trees do not begin to produce flowers until they have been planted 10 or 12 years. These flowers are so light that it requires about 500 of them, when dried, to constitute a pound; and yet, after a few years, each tree may yield from 6 to 40 or 50 pounds. They are cultivated in gardens and parks. The clove is principally used for the seasoning of dishes.

The *animals* and *population* present no remarkable characteristics. The natives are negroes, or Malays; pagans, Mahometans, or Christians converted through the labors of Protestant missionaries. The Dutch rule, directly or indirectly, over all these islands.

ISLAND OF CELEBES. — *Celebes*, so remarkable for the peculiar form of its four elongated peninsulas, possesses very beautiful sites, and a mild and agreeable climate. Gold is collected in the sand of many rivers, and all the plants of the Islands of Sunda are found there. Neither tigers nor elephants are met with, but many wild boars, stags, very mischievous monkeys, serpents, bab-youssas, &c. The inhabitants are Malays, of which the best known are the *Boogis*, skilful and intrepid seamen, whose craft may be seen in all the seas of the south-east of Asia. They are generally Mahometans; some, however, are Christians. The Dutch established at Macassar extend their influence over the whole island.

BORNEO. — *Borneo*, called by the natives *Pooloo Kalemantin*, is the largest island in the world. It is situated west of Celebes, from which it is separated by the *Strait of Macassar*. Its extent is almost equal to that of Germany, but it is thinly peopled, and but little known. The coasts are flat, marshy, and unhealthy; the interior is covered with well-wooded mountains, and presents charming landscapes to the eye.

Minerals are the principal wealth of Borneo. It is a *diamond* producing country, like Brazil; nowhere, indeed, are found such large specimens. The Sultan of Matan possesses one, for example, which is not cut, and which is prized at \$1,400,000. The gold mines are also very valuable, and are wrought in various places, as likewise those of iron, copper, and tin. *Rock crystals* are so abundant in one of the chains which traverse the island, that it has been surnamed *Crystal Mountain*. Excellent coal is

also found in some islands near the mouth of the River Borneo. The largest of these islands, called *Labooan*, (on the north-west coast,) has been taken within a few years by the English government, in order to serve as a place of refreshment and supply for vessels bound to China.

The *vegetation* of Borneo seems to be very luxuriant, but it differs little from that of the Isles of Sunda. Nowhere does the *camphor tree* yield such choice products, insomuch that \$2400 are there paid for a certain quantity (125 pounds) of camphor, which at Sumatra is sold for only \$160, and at Japan would be disposed of at a still lower price. Nowhere are found finer ratans. The fruit of a beautiful tree called *kanari* furnishes a delicious table oil. The trees producing useful resin gums — the benzoin, gutta percha, dragon's blood, gutta gambir, sandarach, &c. — are extremely numerous in Borneo. Pepper, betel, ginger, cinnamon, rice, yams, and cotton also abound. Some of the family of palm trees are likewise found there, whose various products — among others those of the cabbage palm — are highly appreciated by the inhabitants.

Animals. — Borneo produces the largest species of monkeys; the *pongo*, which is about four feet in height, and the *orang-outang*, or man of the woods, which bears even greater resemblance to the human species. It contains also wild boars, babyroussas, elephants, two species of rhinoceros, — the one-horned and two-horned, — two black-haired bears — the Borneo bear, and the Malay bear, &c. Animals characteristic of Borneo, and of all the islands of Malaysia, are the flying quadrupeds, which, strictly speaking, do not fly, but are enabled to bound from one tree to another by means of an extension of the skin between their fore and hind legs, which skin serves to sustain them in the air, and answers the purpose of an umbrella. Such are the *galeopitheques*, or *flying cats*, somewhat resembling bats, and great destroyers of humming birds, butterflies, and all kinds of insects. There are, moreover, frugivorous bats, which really fly, and differ from the bats of other countries, inasmuch as they subsist solely on vegetables: the *edible rosset*, for example, one of the largest that is known, is here encountered in troops of many hundreds, and even thousands.

*Flying Cat.*

The *population* is composed of Malays and Chinese on the coasts, and of negroes in the interior of the country. Among the latter, the most celebrated are the Dyaks, or *head cutters*, so called on account of a detestable code of honor, which encourages the idea that the more heads a man has cut, the more respect he merits. They have a horrible custom of ornamenting their dwellings with human skulls; and there is no enterprise which they will not undertake, either by force or stratagem, against the neighboring tribes, in order to possess themselves of these shocking trophies: a young man cannot think of marrying until he has decapitated at least one enemy. Nevertheless, we are happy to have it in our power to add that these abominable ideas are beginning to be modified, and to disappear under the influence of the preaching of the gospel, which has been introduced into this country by missionaries. The mass of the population are Mahometans and pagans. The Dutch, established at different points on the coasts, exercise their supremacy over more than half of the island.

PHILIPPINE ISLANDS. — These islands, discovered by Magellan, the famous navigator, who first made the circuit of the world, were called *Philippines* in honor of Philip II., King of Spain. They are traversed by a chain of mountains, including terrible volcanoes, which cause frequent earthquakes. The two largest are *Luzon* at the north, and *Mindanao* at the south.

The *climate* is fine, but very damp, and ill adapted to European constitutions. Intense heat is succeeded by violent rains, fre-

quently accompanied, when the monsoon is changing, by those terrible *typhoons*, or hurricanes, which occasion such serious disasters in the China Seas, but which purify the air by dispelling the miasma and vapors emanating from the forests and marshes during the rainy season. These typhoons are usually attended by *waterspouts* — columns of water uplifted by a rapid revolution of the air as high as the nearest clouds, and the danger of which navigators lose no time in averting, by firing cannon shot into their midst, and thus seeking to dissipate them. These islands contain gold and various other metals, which are negligently explored.

Vegetables. — A constant succession of excessive heat and violent rains renders the Philippines extremely fertile. The trees are almost always laden with flowers and fruits. Although the pepper, spices, and many exquisite fruits of Southern Malaysia do not succeed there, the soil is eminently favorable for the cultivation of rice, sugar cane, and tobacco, which are the essential products of these islands. The Spaniards have introduced the wheat and leguminous plants of Europe, as also the cacao and coffee. Among the indigenous vegetables should be named the cotton and indigo plants, ginger, pineapples, many species of banana, the tamarind, which attains the size of our largest trees, and the mango tree, which produces the largest and most esteemed mangoes in the world. Mangroves, bamboos, and ratans form thick forests in the marshes.

Animals. — The Philippines produce many horses, oxen, and sheep. The fat of pork takes the place of butter, which is not manufactured, because the care of a cow and the trouble of milking are labors beyond the energy of the indolent inhabitants of these islands. The great flying squirrel is frequently met with in the Philippines; it is a nocturnal animal, which sleeps by day in the hole of a tree, whence it only issues by night to seek the birds and seeds which compose its habitual food. Owing to the membrane which extends between its paws, it can leap considerable distances from one tree to another; its disposition is mild and gentle; it may be easily tamed, but never becomes attached. Neither tigers, elephants, nor rhinoceroses are found in these islands; but there are many wild boars, stags, deer, monkeys, wild cats, serpents, and crocodiles. The white ants often devastate an

entire storehouse during one night ; the silk worms are produced naturally, and yield several harvests a year.

The *population* belongs to several races: the negroes, the primitive possessors of the country, have been driven into the mountains, into the depths of the thickest forests, where they live by hunting and fishing. Malays occupy the coasts, and form the basis of the population. Chinese, in considerable numbers, are engaged in commerce in the ports ; Spaniards inhabit the cities of the principal of these islands. The *Tagals* of the Island of Luzon have been converted to Catholicism by the labors of Spanish priests, and they are distinguished among all the Malays for their morality, industry, and prosperity ; they are extremely submissive to the clergy, and celebrate, with much pomp and display, all the ceremonies of the Catholic worship. Their features are characterized by a certain degree of nobility and pride, and the women are often remarkably beautiful in spite of their dark complexion ; but their habit of smoking and chewing the betel produces a very disagreeable impression upon foreigners. The



Tagal Houses.

cigars used by the women at Manila (capital of the Spanish possessions) are an inch and a half in thickness and seven or eight inches in length. The women of the upper classes make use of a tobacco leaf rolled up in paper or rice straw. The

Spanish ladies born in the island conform to the customs of the natives ; and it is very common, on the promenade, to see young ladies, elegantly attired, smoking in their open equipages, whilst a servant, stationed on the step, holds in his hand a lighted match.

The houses of the Tagals, constructed of elastic bamboos in such a manner as to withstand the earthquakes, and usually raised a few feet above the ground on account of the constant moisture of a country of rice plantations, present a very original aspect. The description of the Tagals applies likewise to the Bisayans, who inhabit the small islands situated south of Luzon. The Mindanaos, inhabitants of the large island of the same name, are independent of the Spaniards, upon whom they wage an incessant war of surprise and plunder. They are almost all Mahometans, and render themselves formidable as pirates on the neighboring seas.

SECT. 4. POLYNESIA. — The name *Polynesia* (signifying *many islands*) has been bestowed upon the archipelagoes which are scattered over the Pacific Ocean. The natives all speak dialects of the same tongue, and seem to belong to one and the same race, the Malay bearing the strongest resemblance to the copper-colored tribes of America. They are intelligent and industrious, conversant with the art of navigation, very well versed in commerce, and seem to enter readily into the vast current of European civilization. At the commencement of this century all the Polynesians were sanguinary savages, deeply corrupted, and from whom navigators had every thing to fear ; but, through the labors of the missionaries of different churches, a more or less complete transformation has been wrought in these once benighted regions ; and it may now be affirmed that there is no archipelago of any considerable importance which does not possess a Christian population and churches.

The *Sandwich Islands*, the most northern and most important archipelago, are eleven in number, eight only of which are inhabited. The largest is Hawaii, memorable as the place where the famous Captain Cook, after being first worshipped as a god, was killed by the natives in 1779. It contains several volcanoes from 12,000 to 14,000 feet in height : Mouna Roa, whose crater is two and a half leagues in circumference, at the bottom of which

a sea of lava is perpetually boiling. Wahoo, the most beautiful of these islands, has been entitled the "Garden of Sandwich." The climate is mild and uniform ; rains are frequent. The soil is fertile, and produces an abundance of *taro*, whose roots constitute the chief food of the natives ; also, the sweet potato, yams, the fruits of the bread tree, bananas, melons, which are as common there as turnips in this country, sugar cane, ginger, tobacco, cotton, cocoa nuts, oranges, and sandal wood, now almost completely exhausted. The cultivation of indigo and arrowroot has also been introduced. The only indigenous quadrupeds were hogs, dogs, and rats ; but the domestic animals of Europe have been imported.

The *population* is generally composed of large, strong, and agile men, remarkably active and industrious, constructing ships and schooners, and profiting by their advantageous situation between America and Asia by engaging in an active commerce. At the commencement of this century, the natives of these islands were still savages, annually sacrificing hundreds of human victims to their abominable idols. More than half of the children were destroyed by their mothers, and one of these women, now become a pious Christian, would confess, with tears, that she has thus cut short the existence of eight of her own children. The condition of the women was, moreover, horrible ; they neither ventured to eat in the same house with the men, nor to touch their food ; the flesh of dogs was the only meat allowed them. In the same islands which now provision so many foreign vessels with meat and vegetables, famines were frequent, and it was no rare thing for old men and children to die of starvation. The chiefs, who exercised over their subjects a desperate authority, alone lived in luxury, and acquired excessive fatness. These islanders, who are now remarkable for their neatness, were then devoured by vermin, and very subject to cutaneous diseases.

At the time of the arrival of the first American missionaries, in April, 1820, the young king of these islands had just thrown off the yoke of his priests, abolished idolatry, and prohibited human sacrifices. But such a revolution had completely disorganized the social state ; there was no security either for property or life ; oppression, violence, murder, and the most audacious cor-

ruption every where prevailed. Now, after thirty-four years of labor and efforts on the part of the missionaries, this people have become a Christian nation. A fourth of the inhabitants are efficient members of Protestant churches, who religiously observe the Sabbath; have erected a great number of temples; practise Christian matrimony; have, for the most part, learned to read; possess the Bible, translated into their own language; study our arts and trades; have established schools, and even maintain an academy where foreign languages, sciences, and theology are taught. In a political point of view, a constitution has been promulgated by the king and chiefs; the police is thoroughly organized, and the king of this little state has had the satisfaction of seeing his independence recognized by the United States and the great powers of Europe. The Christian work seemed to be so fully confirmed, that the churches of Sandwich were, last year, left to themselves by the American Society of Missions, and they have already, in their own name, despatched evangelical preachers into different islands of Polynesia. Since the times of the primitive church, the gospel had never achieved, by the simple means of persuasion, so rapid, so complete, and so decisive a triumph. The Catholic missionaries brought thither, and protected by French squadrons, have likewise obtained signal although far less important results.

The *Marquesas Islands*, called also *Nookaheeva*, from the name of the largest among them, form an archipelago, situated south-east of that of Sandwich. They are very mountainous, arid on the heights, quite thickly wooded in the well-watered valleys, the only places where the soil is susceptible of cultivation. The climate is salubrious, but very dry. The productions present nothing remarkable. The inhabitants are esteemed the handsomest and whitest of all the Polynesians. They are large, robust, and vigorous, passionately fond of war; cannibals to such an extent, that in times of famine they not only devour their prisoners, but even women and children of their own tribes. Nowhere has the art of *tattooing* been carried to such a degree of perfection; it once constituted the indispensable ornament of the chief, the priest, and the soldier. This operation, which consisted in delineating various figures on different portions of the body,

by introducing coloring matter into the flesh with the point of a bone, was a long and painful operation, which is now almost every where abandoned. France took possession of these islands in 1842.



Tattooed Nookaheeva.

The *Low Islands*, or *Pomotou Archipelago*, south of the *Marquesas Islands*, are flat, sandy bodies of land, encompassed by coral reefs. They are distributed in two groups — that of the *Evil Sea* at the north, and the *Dangerous Archipelago* at the south. With these islands are naturally associated the *Gambier group*, five or six islands, surrounded by a circular reef, and whose inhabitants, recently civilized by Catholic missionaries, and placed under the protectorate of France, have made remarkable progress in every respect. Farther east is found the little *Island of Pitcairn*, which contains nearly 100 inhabitants, descendants of mutinous English sailors, who in 1789, after many adventures, sought refuge on this islet, whence almost all perished victims of their internal dissensions; but one of their number, John Adams,

a convert to Christianity, instructed the women and children, and organized a small, well-regulated, and patriarchal government, which still exists. Much farther east is the *Island of Paques*, the most eastern inhabited land of Oceanica, a small island which deserves mention on account of its singular monuments, consisting of colossal statues and edifices, constructed of huge stones, whose execution seems to appertain to a people anterior to the rude Polynesians, who now inhabit this volcanic rock, destitute of springs and trees.

The celebrated *Society Islands* are situated west, and not far distant from the Pomotou. The largest and most important of these islands is *Otaheite*, or *Tahiti*, composed of two rounded peninsulas, which are connected by an isthmus of one and a fourth miles in breadth. The next after Tahiti are *Ermio* and *Raiatea*. The aspect of all these islands is volcanic. In the centre are mountains which rise 10,000 feet in height, and diverge in short chains towards the shore, where are found plains bordering the island, and displaying an inconceivable luxuriance of vegetation. These islands, as a whole, present a generally enchanting aspect, and Tahiti, in particular, merits the title of the *Queen of the Pacific Ocean*. Almost all of them are encompassed by a bank of coral, from 20 to 30 paces in breadth, and usually situated about a mile from the coast. The wind, which blows constantly from the main sea, drives the waves violently thither, and the latter, after madly shooting upwards, descend in sheets of foam; the lagoon, however, situated between the coral reef and the coast, is usually as tranquil as a pond. If the islands are very small, and contain no rivers, the reef often makes the entire circuit of them; but wherever a watercourse of any importance empties into the sea, the bank of coral usually presents an opening, which not only forms an extremely safe harbor, but also affords navigators a reliable watering place; thus, even here, we cannot fail to recognize the bounty of Providence, which, while providing for the entrance and egress of ships, has also made provision for one of their most indispensable supplies.

The *climate* is hot, but not scorching, and the temperature varies but little, owing, doubtless, to the immense extent of water which surrounds these islands. The sky is almost always clear;

but at the time of the rainy season, the showers often continue during several weeks. Neither the waterspouts nor hurricanes of the Indian Sea are known there; but gales of wind are sometimes experienced, from which the plantations, and even the houses, suffer much damage. Thunder storms are more terrible in these latitudes than in any other part of the world.

Vegetables. — The heat of a tropical climate, combined with great moisture, and acting upon a fertile soil, renders the vegetation of these islands both rapid and vigorous. The botanical kingdom is, however, more abundant than varied. Beautiful forests cover the sides of the hills and mountains. Among the different vegetables should be mentioned the *paper mulberry tree*, whose bark, suitably beaten and prepared, is used in the manufacture of fine and soft cloth; the *barringtonia*, a tree with flowers resembling the lily, and whose fruit, mixed with poison, is thrown into the sea, in order to intoxicate the fish, which then suffer themselves to be taken with the hand; the finest *sugar canes* in the world; twenty-eight varieties of *jacca trees*, which grow naturally in all these islands, (and three of these trees are sufficient for the subsistence of a man, each plant producing two and sometimes three crops a year;) fifteen varieties of bananas, cocoa nut trees, yams, the potato, and finally the taro, the most useful plant to the islanders next to the bread tree.

Animals. — The archipelago contains no serpents. The only venomous reptiles (and even their sting involves no serious consequences) are a species of centipede and a very small variety of the scorpion. There are no birds of prey, and no wild beasts, except a few wild boars and dogs, whose presence in the mountains occasions few accidents. At the time of its discovery, the only quadrupeds were the hog, which still abounds; the dog, whose flesh, regarded as a delicate dish, was reserved for the chiefs; and rats infested the islands until cats were introduced, which are now highly appreciated in every house. The birds are neither distinguished for the beauty of their plumage nor the melody of their song; there are many paroquets, turtle doves, kingfishers, and bluish herons. The Europeans have here naturalized most of their domestic animals.

The *population* have an olive complexion, oval face, open fore-

head, full, brilliant, and jet black eyes, straight and aquiline nose, and a somewhat large mouth, revealing teeth of dazzling whiteness; their hair is black, smooth, or curly, but never woolly. They are grave, courageous, and of a frank and open disposition. Less sanguinary, but even more corrupt, than the Sandwich Islanders, the Tahitians were earlier initiated into the gospel, which was carried thither in the year 1797, by English missionaries. It was scarcely, however, until the commencement of 1815, that they began to renounce idolatry and human sacrifices, together with the practice of infanticide. Christianity has by degrees transformed the new generations; almost all know how to read and write; excellent schools and churches have been established throughout the country; the Bible, and numerous other pious, moral, or instructive works, have been placed in the hands of these islanders, who are now all lodged and clothed according to the European model, and devote themselves to various arts or cultivations, of which the first navigators who visited them would have pronounced them incapable. In a word, although morality here, as elsewhere, is not entirely satisfactory, although civilization is still immature and ill confirmed, and although, by the establishment of the protectorship of a Catholic power, the churches have been prematurely deprived of the support of their natural directors, the English missionaries, who had given them birth, this little Tahitian nation, continuing firm in its Protestant faith, and unceasingly making new advances in the path of progress, presents one of the most interesting monuments of the awakening of evangelical faith in the nineteenth century.

The *Austral Islands*, about 200 leagues south of Tahiti, constitute a little archipelago of five islands, all inconsiderable, the best known of which are *Rouroutou* and *Toubouai*. All the natives have long been evangelized through the active zeal of the native Christians of the Society Islands.

Cook Islands, situated south-west of Tahiti, form small groups of islands, so depopulated by cannibalism and wars, that in Harvey, for example, there remained in 1830 only three women and five men; and yet among the latter the title of king was contested. These islands have all become Christianized through the mission-

ary zeal of Tahitian believers, and the activity of the martyr Williams, the apostle of Oceanica. They possess the Bible in their own language, temples of worship, and schools, and the population is making gradual advancement. *Raratonga* is the most prosperous and celebrated among them.

The *Navigator's Islands*, 300 leagues north-west of the preceding, have likewise been converted to Christianity by the labors of Williams. Some of them, such as *Savaii*, *Upolue*, and *Tutuila*, are large, mountainous, and fertile, all quite well peopled, and producing vigorous and intelligent islanders, distinguished in the art of navigation, which has won for these islands the name conferred upon them by Bougainville, when he discovered them, in 1768. West of these are found the very small clusters of *Wallis* and *Fotouna*, over which France established her protectorship in 1844, and whose inhabitants have been converted to Catholicism by French missionaries.

The *Tonga* or *Friendly Islands*, south-west of the Samoan, are divided into three archipelagoes, that of *Tonga* at the south, *Hapai* in the centre, and *Vavao* at the north; but *Tonga-taboo*, or *Tonga the Sacred*, is much the most considerable of all these islands. They have nearly all become evangelized, but the pagan portion obstinately resist the authority of King George; and other Protestant chiefs and Catholic missionaries of the Wallis Islands, by interposing in these contests, have not facilitated the adjustment of the difficulties. Dissensions have recently arisen in the Island of Tonga, but the authority of the king seems to have triumphed without bloodshed.

New Zealand, south-west of the Friendly group, consists of two large islands separated from each other by *Cook's Strait*, from four to six leagues in breadth. The northern island, called *New Ulster*, is furnished with broad bays and excellent ports. The other, *New Munster*, is extremely mountainous, difficult of approach, and possesses very few harbors. Their surface almost equals that of Great Britain, and they are opposite, or, as we sometimes say, at the antipodes of France. The coast is generally rugged, high, and steep; the countries in the interior present an undulating, unequal surface, and the mountains are covered with snow during the greater part of the year. *Mount Edgecumbe*,

in the northern island, not far from Cook's Strait, is no less than 10,000 feet high.

The *climate* is temperate and salubrious, especially in the north; the southern island is colder, and exposed to violent hurricanes, of which its shores, so singularly corroded by the waves, bear the impress.

The *mineral substances* are unimportant. Thermal and sulphurous waters are found there, and *jade*, a stone of which the natives manufacture weapons and sharp instruments.

The *soil* is fertile, and susceptible of all kinds of cultivation. The cereals, roots, and legumes of Europe succeed very well, as likewise batatas, yams, maize, and taro. Before the discovery of these countries by the Dutch Tasman, the natives possessed few alimentary plants except the *esculent fern*, whose very fibrous roots yield a nourishing juice; a species of *purslain*, now cultivated in our gardens under the name of *New Zealand spinach*, and which possesses over the common spinach the advantage of keeping for a great length of time, and of perfectly resisting the heat of summer; and the *tea myrtle*, which grows on the hills bordering the sea, and serves to take the place of China tea. But the inhabitants of New Zealand find other more important sources of wealth in the cultivation of its magnificent *pin*es, no less esteemed for joinery and timber work than for the masting of vessels. These are the *kauri pin*es, or *dammara australis*, whose full-grown forests, like a quincunx of immense columns, frequently present trees which rise 90 feet in height without branches, and above which spreads a dome of verdure so dense as to exclude the rays of the sun. Beneath these solitary and silent arches, a religious and solemn impression involuntarily takes possession of the soul of man, and fills his mind with a deep sense of the power and majesty of the Creator. A production of this country, which has become rare, and which has lost much of its former reputation, is the *New Zealand flax*, a plant which grows spontaneously in low and damp soils, and whose stalk somewhat resembles that of the iris. The leaves, which are broad, and diverge in long streamers, contain fibres from which the natives procure a flax as remarkable for its fineness and silky lustre, as for its extreme tenacity, and of which they make their finest cloth, as also lines

and cordage. Attracted at first by its tenacity, Europeans had thought of naturalizing this plant in their own countries, when



New Zealand Flax.

they discovered, that after one or two washings, cloth manufactured of this material became reduced to tow, whilst the cables exposed to the damp air broke and crumbled to pieces. This circumstance has effectually deterred them from encouraging the use of this textile plant.

Animals. — As respects mammals, New Zealand produced only dogs and rats. The Europeans have introduced oxen, hogs, goats, sheep, and poultry, all of which have easily become accli-

mated. There are few insects or butterflies, but some remarkable birds, among others the *apteryx*, a bird of the ostrich and casso-



Apteryx.

wary family, which seems to be rapidly disappearing, and probably only owes its preservation up to this period to its nocturnal habits and the burrows which it digs. The principal peculiarity of this animal is, that it flies without wings, their place being merely occupied by a small member of an inch and a half in length, terminating in a hooked claw. Moreover, its feathers are of such a nature, that at a distance one would mistake them for

hair, or a falling mane. It subsists on insects, which it seizes by night with its bill, in the marshy soils where it delights to dwell. Its size little exceeds that of a large hen. This is the smallest species of the ostrich genus. It would appear, however, that New Zealand has produced, up to the present time, birds of this same family which were of gigantic stature, since, from the numerous bones which have been discovered, the *dinomis* must have attained a height of eleven feet; that is to say, double the size of the largest ostrich. There have also been found in these islands the remains of many races of birds only recently become extinct.

The *population* are renowned for their lofty stature, their vigorous constitutions, and the regularity of their features. For a long time, the New Zealanders rendered themselves formidable to navigators by their perfidy, ferocity, and thirst for human blood. Many crews, deceived by them, or disabled by a tempest, were massacred. Among themselves, they breathed only wars and vengeance; every village was fortified and surrounded by several enclosures of stakes; the warriors (carefully tattooed, and their hair adorned with long plumes) never issued from their houses unarmed, or without taking the greatest precautions. Immediately after a battle, hundreds of men, women, and children were roasted in the oven, and devoured in their horrible festivals by the victorious army. Even the children participated in these infernal scenes, and from their infancy were excited to theft, hatred, and the most cruel deeds. Their gods were only malicious beings, who delighted in tormenting men, and the principal, Atna, was regarded as an invisible cannibal, who could only be exorcised by imprecations and threats, when he entered the body of an individual, in order (by disease) to devour him. Notwithstanding the ferocity and sanguinary passions of these terrible savages, courageous English missionaries have not been deterred from carrying the gospel of peace into their midst. The first essays, attempted at the instance of the venerable Marsden, were commenced in 1819, in the northern island, and proved infinitely disastrous. The natives slaughtered their victims before the houses of the missionaries; the children who attended their schools were often killed and eaten; or if a war chanced to break out, they were put to flight and their houses burned to the ground.

Nevertheless, by dint of patience, the malevolence of the natives was gradually disarmed, and as soon as some of them had learned to read, and were thus enabled to appreciate the knowledge which was imparted to them, the desire for instruction spread from place to place ; every one wished to possess a few fragments, at least, of the gospel, and all commenced the study. The native teachers multiplied, and the Christian doctrines thus penetrated into places where no European had ever set his foot. It is now estimated that more than 50,000 natives have become Christians, and the whole of the northern island has been brought, externally at least, under the influence of the gospel. The work has made less progress in the southern island ; but even there, where Christian principles have not yet penetrated into the heart, they have caused the disappearance of the most crying abominations of idolatry and cannibalism. To the labors of the missionaries sent thither by different Protestant churches have been added those of a large number of Catholic priests, whose efforts have also met with some success. Moreover, since, in 1840, by a treaty concluded with the chiefs of the two islands, the English have been put in possession of the sovereignty of this country, its religious liberty, as well as public peace, has been carefully protected, and with the exception of one or two attempts at insurrection and violence, the succeeding years have been marked by continual progress in prosperity and civilization. A great number of English farmers have emigrated to New Zealand, which is now one of the most important colonies of Great Britain, and at the same time one of the most remarkable fruits of the missionary zeal of the Christians of modern times.

To New Zealand belong many islands of secondary importance, and which are still, for the most part, uninhabited — *Stewart*, a large body of land near the coasts south of New Munster, and *Auckland* at the south-east. The principal island of the *Chatham* group is of considerable size, and inhabited by savages of the same race as those of New Zealand. The *Kermadec Islands*, at the north-east, are unoccupied ; *Norfolk*, on the contrary, at the north-west, renowned for its magnificent pines and its cabbage palms, is a place of transportation for the most incorrigible criminals of England and the penal colonies of Australia, a kind of terrestrial purgatory.

The *Archipelago of Magellan*, and the *Archipelago of Anson*, east of Japan, consist of little but deserted islands, frequently laid waste by volcanoes, and where scarcely any thing is to be seen except tortoises, rossets, birds, and in some of them wild hogs. At the north-east, and completely isolated in the midst of the sea, is found *Lot's Wife*, a huge rock, which rises perpendicularly to a height of 340 feet, and in whose cavernous sides tumultuous waves are engulfed with a terrible report.

The *Marianne Islands*, south-east of the preceding, form a long chain, disposed in a line from north to south. They were discovered in 1521, by Magellan, who surnamed them *Ladrones*, or *Islands of the Thieves*, from the thievish propensities by which the natives were characterized. They afterwards received their present appellation from a Queen of Spain, who sent thither the first Catholic missionaries. The climate is hot without being unhealthy. The productions are those of the countries lying nearest to the equator — cocoa nut, jacca, orange trees, &c.

The Spaniards have introduced into these islands, and especially into *Guam*, cotton, cacao, indigo, maize, and sugar cane, and they have also naturalized our domestic animals, which, in those of the islands that are deserted, live wild in the forests. They have exterminated the greater part of the ancient population, by endeavoring to impose their religion upon them. The remnant, which is composed of natives intermixed with the Tagals of the Philippines and the Indians of Peru, forms a tolerably civilized society, wholly Catholic, but indolent, holding labor in abhorrence, and passionately fond of music and cock fights. In the *Island of Tinian* may be seen colossal ruins, the memorials of an unknown people, and which indicate a certain degree of civilization.

The *Carolines*, situated south of the preceding, form an immense chain of more than 500 islands, extending from west to east, over a length of nearly 600 leagues. They are generally small, surrounded by reefs, of an agreeable climate, but exposed to hurricanes. The principal productions are ignames, cocoa nuts, the fruits of the bread tree, &c.; many tortoises, holothuria, and fine shell fish exist on the coasts; neither venomous serpents nor wild beasts are found in the interior. Their inhabitants are the boldest navigators of Oceanica, and perhaps of the whole

world. Many, without other compass than the stars, undertake voyages of several hundreds of leagues, repairing even to the Philippine or Marianne Islands, to exchange their fruits and dried fish for iron, cloth, and other articles of which they have need. Their light and graceful boats seem to shoot like arrows over the sea. They are, moreover, hospitable, and apparently possessed of mild and pure manners. They are almost all handsome men, of the copper-colored race; but there are some negroes among them.

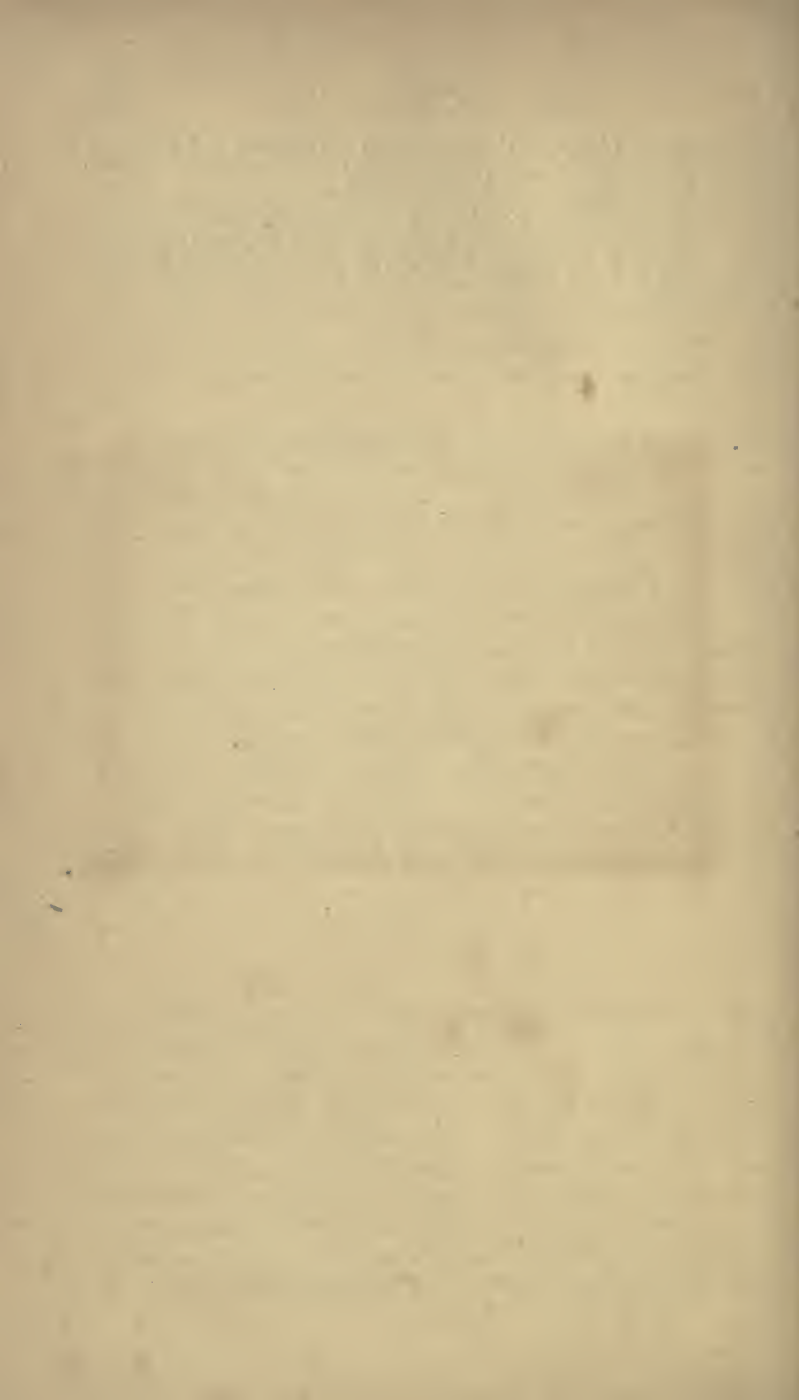
The most western group, known by the name of *Pelew* or *Palaos Islands*, are sometimes considered separately; but these islands closely resemble the Carolines.

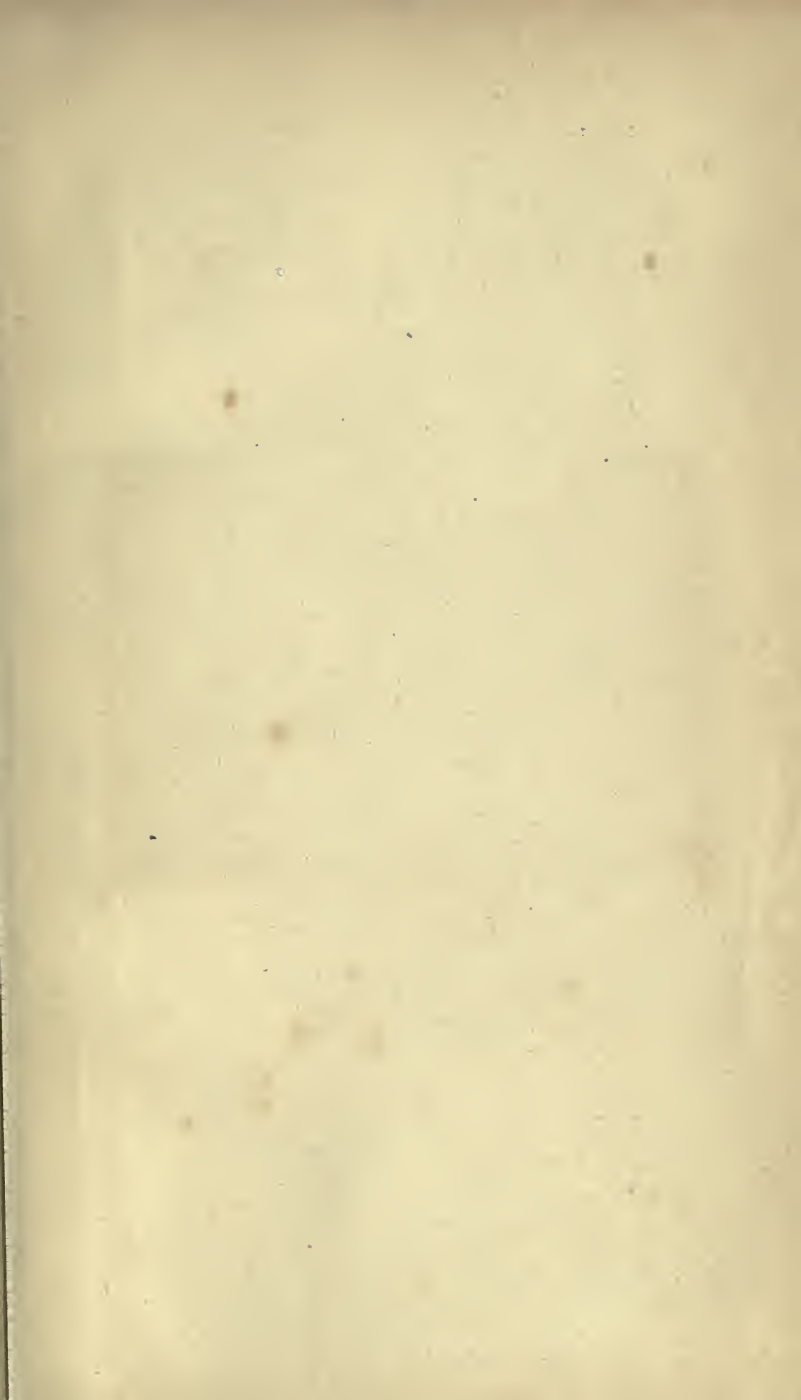
The immense *Archipelago of the Mulgraves* is situated east of the Carolines, and extends from north-west to south-east, on both sides of the equator. It is composed of two principal groups, the *Marshall Islands* at the north, and the *Gilbert Islands* at the south. Each of the latter is subdivided into two other smaller archipelagoes; the first comprising the *Ralick Islands* at the west, and the *Radack Islands* at the east; and the second embracing the *Scarborough* group at the north, and the *Kingsmill* group at the south. These islands, almost all of which are very small, clothed with stunted shrubs, and a few cocoa nut or bread trees, possess quite a numerous population, among whom Christians from the Sandwich Islands have diffused the knowledge of the gospel.

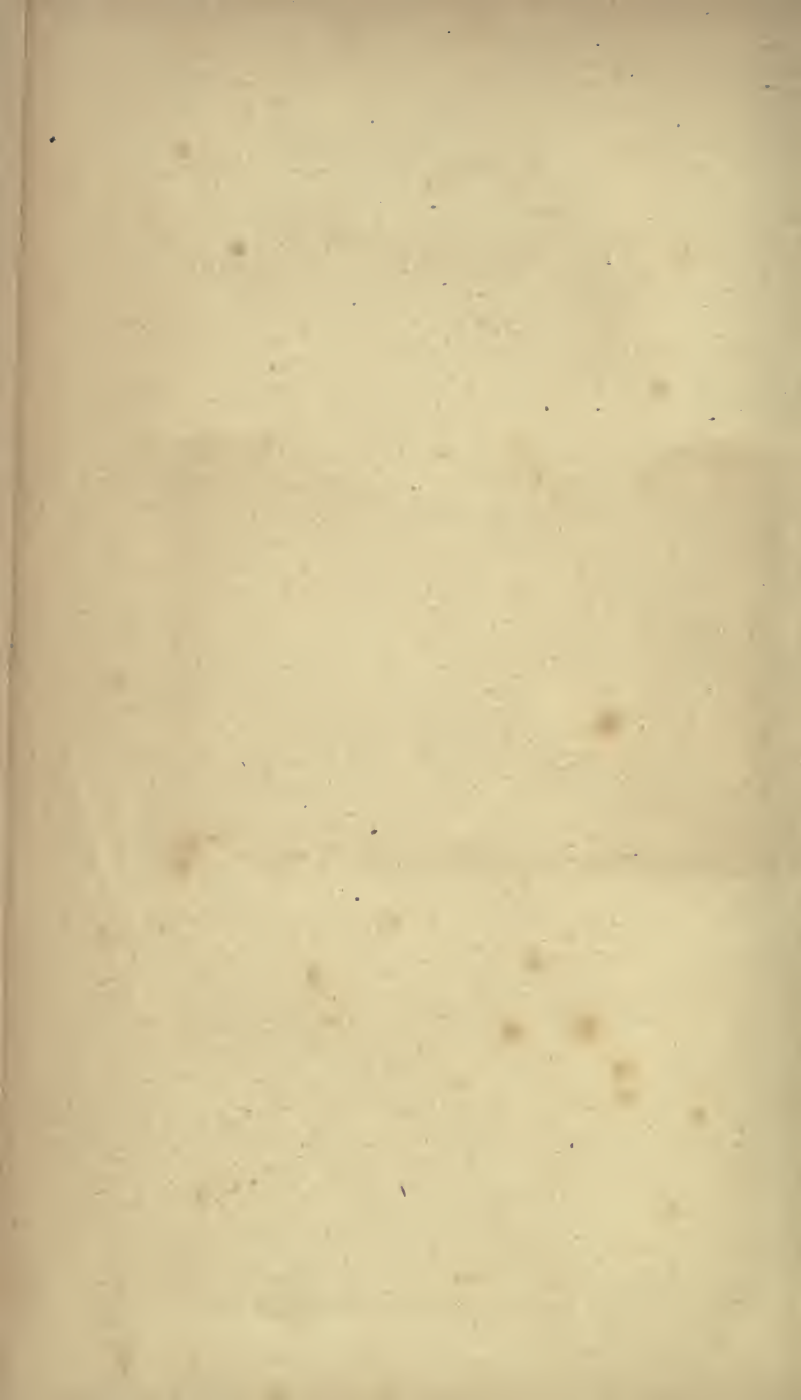
WE have now arrived at the conclusion of our geographical survey, and trust that the expectations of our readers have been in some degree realized. After thus tracing through every continent, and under all climates, the infinitely varied and compassionate wisdom of the Most High, who has never left himself without a witness among men, and whose goodness is over all his works, — can we for a moment suppose that evil, which reigns in the world, proceeds from the hand of this all-perfect Being? And should we not one and all be encouraged to seek in the gospel of Jesus Christ, which effects such marvellous transformations among

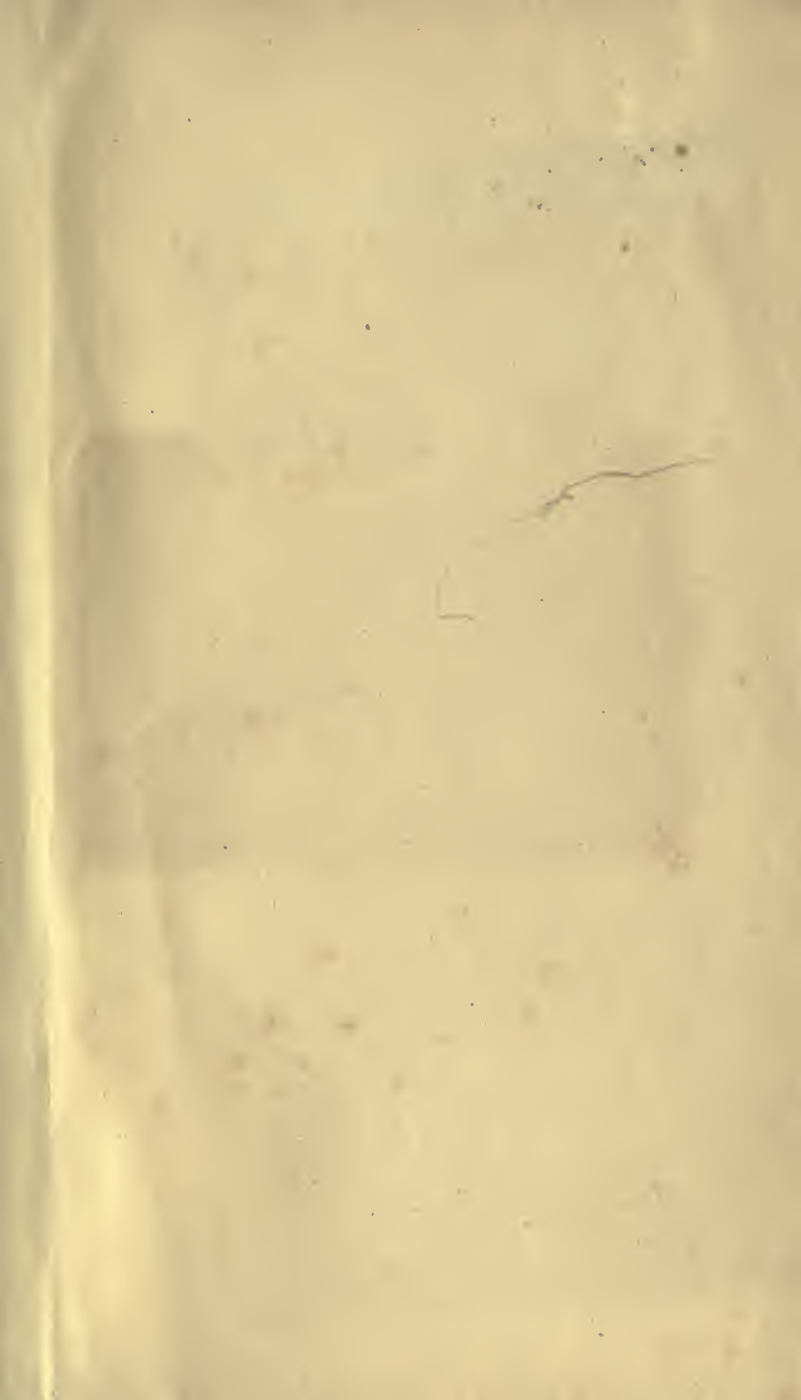
the savages of Oceanica, those means of purification and salvation of which the heart of each stands in need?

That God's blessing may rest upon this volume, and that some truly useful knowledge may be gleaned from its pages by those who peruse it, is the prayer, as it will be the sweeter recompense, of the author.









UNIVERSITY OF CALIFORNIA LIBRARY,
BERKELEY

THIS BOOK IS DUE ON THE LAST DATE
STAMPED BELOW

Books not returned on time are subject to a fine of
50c per volume after the third day overdue, increasing
to \$1.00 per volume after the sixth day. Books not in
demand may be renewed if application is made before
expiration of loan period.

FEB 15 1932

FEB 15 1932

Int

59064

GEOS

87

UNIVERSITY OF CALIFORNIA LIBRARY

